

THE COCKROACH GENERA *SUNDABLATTA*
HEBARD, *PSEUDOPHYLLODROMIA* BRUNNER, AND
ALLACTA SAUSSURE & ZEHNTNER (BLATTARIA:
BLATTELLIDAE, *PSEUDOPHYLLODROMIINAE*)

Roth, L. M., 1996. The cockroach genera *Sundablatta* Hebard, *Pseudophyllodromia* Brunner, and *Allacta* Saussure & Zehntner (Blattaria: Blattellidae, *Pseudophyllodromiinae*). — *Tijdschrift voor Entomologie* 139: 215-242, figs. 1-77. [ISSN 0040-7496]. Published 18 December 1996.

The known species of *Sundablatta* and *Pseudophyllodromia* are redescribed. Two new species of *Pseudophyllodromia* are described. Keys are presented to distinguish the adults in both genera. *Euhanitschia* Princis and *Compsosilpha* Princis are synonymized with *Allacta*, and their type species are redescribed. *Allacta figurata* (Walker) and *A. diluta* (Saussure) are distinct species. Dr. L.M. Roth, 81 Brush Hill Road, Sherborn, MA 01770, U.S.A.

Key words. — *Sundablatta*, *Pseudophyllodromia*, *Allacta*, Blattaria, Blattellidae, cockroaches, taxonomy, redescriptions, new species, synonymies.

Princis (1969: 931) listed two species under *Sundablatta*, namely *sexpunctata* and *pulcherrima*, and a third, *Margattea inermis* Bey-Bienko with a query. Bey-Bienko's (1938: 121) description of *inermis* does not agree with the diagnostic characters of the genus. Excluding *inermis* which I have not seen, I added a third species, namely *Allacta raapi* Hanitsch, as a new combination, based on the original description and illustration (Roth 1993: 387). I also describe below, a strikingly coloured nymph which may prove to be a new species when the adults are found.

Princis (1969: 932) listed five species and one subspecies of *Pseudophyllodromia*. These are redescribed, and the previously unknown or undescribed males of *ornata* and *laticeps* are described. Two new species, *simulurensis* and *aronsoni* are described, and *poeniensis* *laeta* Hanitsch is raised to species rank.

Two of Princis's genera (1950: 178, 180), namely *Euhanitschia* and *Compsosilpha* are synonymized with *Allacta* Saussure and Zehntner.

The following museums and their collection managers or curators kindly loaned me specimens:

ANSP — The Academy of Natural Science of Philadelphia, Philadelphia, PA, U.S.A.; Mr. Donald Azuma; HECO — Hope Entomological Collections, University of Oxford, England; Dr. George C. McGavin & Mr. I. Lansbury; MCZC — Museum of Comparative Zoology, Harvard University, Cambridge, MA, U.S.A.; RMNH — National Museum

of Natural History (Rijksmuseum van Natuurlijke Historie), Leiden, The Netherlands; Mr. J. van Tol; ZILS — Zoological Institute, Lund, Sweden; Dr. Roy Danielsson.

SYSTEMATIC PART

Subfamilial placement and affinities

Sundablatta, *Pseudophyllodromia*, and *Allacta* Saussure and Zehntner are closely related by reason of strong similarities in their wing venation and male genital phallomeres, subgenital plate, and styles (cf. illustrations in this paper with those in Roth 1991, 1993, 1995). Their male genital hook is on the right side placing them in the *Pseudophyllodromiinae* (= *Plectopterinae* of McKittrick, 1964). Wing venation is similar.

Princis (1950: 180) included four genera in the *Pseudophyllodromiae* group, namely *Pseudophyllodromia*, *Sundablatta*, *Euhanitschia* Princis, and *Compsosilpha* Princis. After examining the type species of the last two genera I am redescribing them (below) and synonymizing them with *Allacta*.

Princis listed *Allacta* (genus 114) near the above four genera (genera 115 to 118) in his Catalogus suggesting that he was aware of their close relationship. Princis presented a key to distinguish the four genera (omitting *Allacta*) in his *Pseudophyllodromiae* group. The following key replaces his key (it is understood

that his *Pseudophyllodromiae* group may include other genera not studied here).

1. Front femur Type C; pulvilli only on the fourth proximal tarsomere of all legs. Eyes not extending below the level of the antennal sockets (e.g., fig. 3) *Sundablatta*
- Front femur usually Type B 2
2. Pulvilli on four proximal tarsomeres of the front and midtarsi, and only on the fourth tarsomere of the hind legs. Eyes do not extend below the level of the antennal sockets (e.g., fig. 13) *Pseudophyllodromia*
- Pulvilli only on the fourth proximal tarsomere of all legs. Eyes usually extend below the level of the antennal sockets (e.g., fig. 60; see also figs. in Roth 1991, 1993, 1995); if the eyes do not extend below the sockets then the head and pronotum have markings as in figs. 65 and 66 ... *Allacta* (= *Euhanitschia* and *Compsosilpha*)

Genus *Sundablatta* Hebard

Sundablatta Hebard, 1929: 76. – Type species: *Pseudophyllodromia sexpunctata* Hanitsch. – Hebard 1929: 76, by selection.

Diagnosis (after Hebard). – Head very broad projecting beyond pronotum, interocular space very wide. Pronotum symmetrically transverse trapezoidal with rounded angles. Tegmina and wings moderately reduced, discoidal sectors of former oblique, area of costal veins of latter very broad. Front femora very heavy, anteroventral margin armed with a row of piliform spinules, terminating in two long distal spines [Type C₂]; median tarsi with a small pulvillus on the fourth segment only. Male abdominal terga unspecialized. Subgenital plate of the *Balta* [= *Mareta*] type.

To the above can be added the following: The interocular space is about the same or greater than the distance between the antennal sockets; eyes do not extend below the antennal sockets (figs. 3, 11). The shape of the adult pronotum is more oval than trapezoidal (figs. 1, 7). Hind wing with simple radial and media vein, the cubitus vein straight with complete and with or without an incomplete branch, apical triangle subobsolete or absent (figs. 6, 10). Fourth tarsomere of all legs (not just the median tarsus) with a pulvillus, tarsal claws simple, symmetrical, arolia present. Genital hook on the right side; distal end of median phallomere with setal brushes.

The habitus of the three known species are similar and readily identifies the genus: the head is black with a narrow white band between the eyes above the antennae (figs. 3-11; the pronotum is black with a narrow white or white and yellowish band partially or completely surrounding the border, and the tegmina

are black with white, white and yellowish, or orangish maculae (figs. 1, 7).

Key to adults of *Sundablatta*

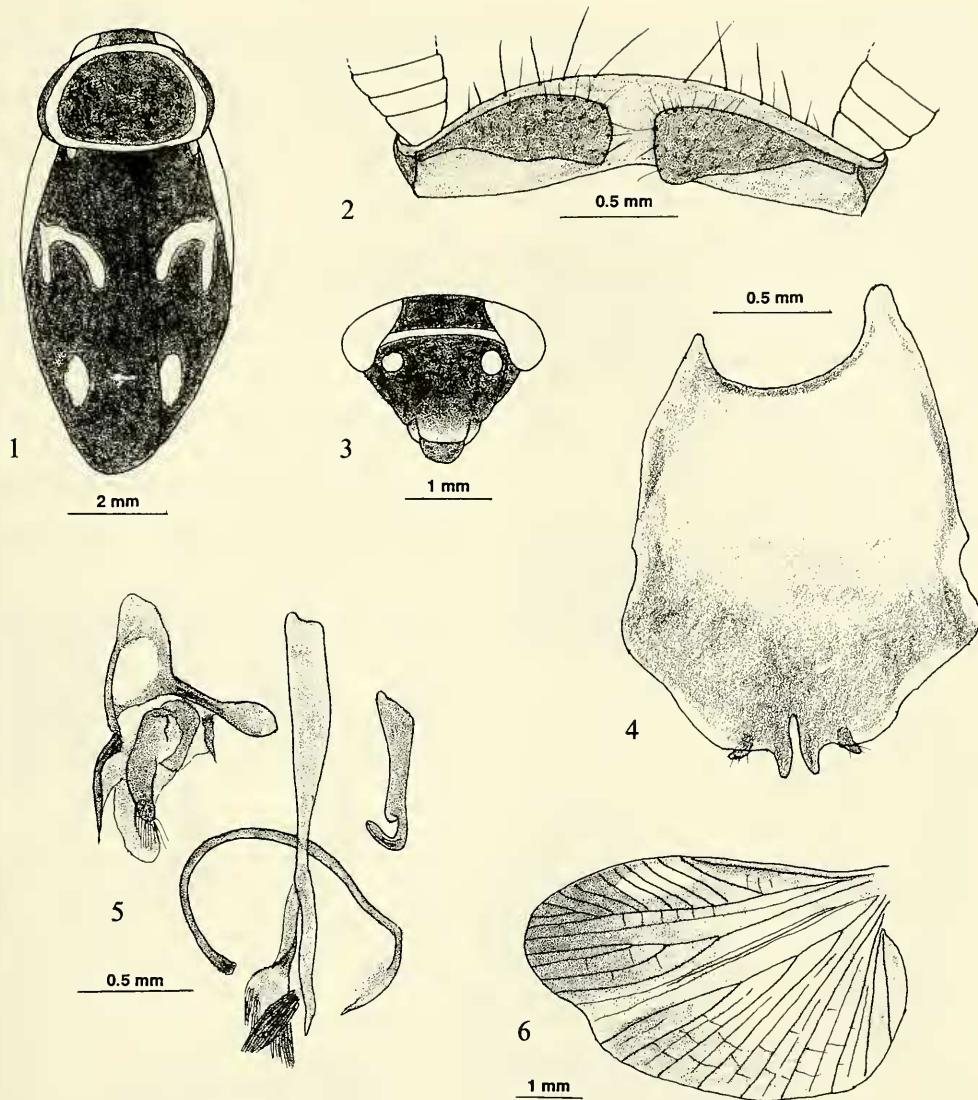
1. Pale band around the pronotal macula horseshoe shaped, following the lateral and anterior margins but not extending along the hind border (Hanitsch, 1932a: fig. 8) *raapi*
- Pale band completely or almost completely surrounds the lateral, anterior, and posterior margins of the macula 2
2. Pale band is complete around the edge of the pronotum (e.g., fig. 1). Tegmina with two pale maculae (exclusive of the pale subcostal area) .. 3
- Pale band on pronotum is interrupted in the middle of the hind margin (fig. 7). Tegmen with three elongated, separated maculae, one in the center, another in the apical part of the marginal field, and a third in the middle of the wing cover (fig. 7). Male interstyler margin as in fig. 8 *sexpunctata*
3. Tegmina with the anterior pale macula an inverted V-shape (fig. 1). Male interstyler margin as in fig. 4 *pulcherrima*
- Tegmina with the anterior pale macula an oblique stripe, not V-shaped (♀) sp. (unnamed)

Sundablatta pulcherrima (Shelford) (figs. 1-6)

Pseudophyllodromia pulcherrima Shelford, 1906: 266, pl. 14, fig. 3 (male and female). – Shelford 1908: 17; Hanitsch 1915: 59, pl.3, fig. 15; 1923a: 464; 1925: 89; 1933a: 314; 1933b: 232.

Sundablatta pulcherrima. – Hebard 1929: 76; Bruijning 1948: 89; Princis 1969: 931.

Material examined. – Lectotype (here designated), ♂, N.W. Borneo, Kuching [SARAWAK], capt. 9.x.1899 by Dyak coll., pres. 1900 by R. Shelford; Type 108 1/1, in HECO. SARAWAK. Paralectotypes: HECO: same locality and collector data as for the lectotype, with different capture dates and type numbers as follows: 1♂, 108^{1/1}, 14.viii.1899, 1♂, 108^{2/1}, 13.vii.1899, 1♀, 108^{1/1}, 5.viii.1899, 1♀, 108^{1/1}, 9.x.1899, 1♀, 108^{1/1}, 7.iii.1900, 1♂, 108^{1/1}, 26.x.1899, 1♂, 108^{1/1}, 27.vii.1900. Additional material: BORNEO. ANSP: Kuching, N.W. Borneo, 1♀ (only head and pronotum intact), flowering tree, 17.ix.1900, 1♀, 9.viii.1899, Dyak coll., pres. 1900 by R. Shelford. Additional material. – Sarawak. ZILS: Bako National Park, 1♀, 1-9.i.1979, Gärdenfors, Hall, Hansson, Samuelsson. HECO: 1♀, Mount Poi, 200 ft.; retained in MCZC. Borneo. RMNH: 16 km N. of Bario, Long Rapun, Sg. Dapur, 115.35°E 3.53°N, 1200 m, 1♂ (terminalia slide 166), 1♀, 22.ii.1987, 2♀, 20.ii.1987, J. Huisman. ANSP: 1♂, 1911-178, C.J. Brooks (det. Hebard, 1927, and Uvarov). Two females retained in MCZC. Sabah. ZILS: Malaysia, Sabah, Sipitang, Mendolong, T1B/W4, 1♀, 14.iii.1989, S. Adebratt. RMNH: SE. Sabah,



Figs. 1-6. *Sundablatta pulcherrima* (Shelford). — 1, 3, 6, female paralectotype from Kuching, Sarawak, habitus, head, and hind wing respectively; 2, 4, 5, male from 16 km north of Bario, Long Rapun, Sarawak: 2, supraanal plate and paraprocts (ventral); 4, subgenital plate (dorsal); 5, genitalia (dorsal).

Malaysia, Danum Valley Field C., c. 150 m, Malaise trap 10, 1♀, 20-26.iii.1987, C. v. Achterberg. ANSP: Sandakan, Borneo, 2♀ (det. Hebard, 1927), Baker. BRUNEI. ZILS: Brunei, Borneo, 1♀, Staudinger, coll. Br. v. W.

Redescription. — Male: Head projecting beyond edge of pronotum. Interocular distance the same as the space between the antennal sockets (fig. 3). Pro-

notum suboval (fig. 1). Tegmina and wings reaching slightly beyond end of abdomen, discoidal sectors of former oblique. Hind wing with subcostal vein reaching to about middle of the costa, costal veins thickened on distal halves, radial vein straight, simple or with a small apical branch; cubitus vein straight with three or four complete and no, or one small incom-

plete branch, apical triangle absent (fig. 6). [in one specimen, the left hind wing is abnormal with the positions of the media and cubitus veins apparently reversed; the media vein is straight with three complete branches, cubitus vein oblique at distal end with one small branch, apical triangle absent]. Front femur with a row of closely spaced piliform spinules, distally there may be two to four more widely spaced and thicker 'spinules' of similar length (Type C₂); fourth tarsomere of all legs with pulvilli, tarsal claws simple, symmetrical, arolia small. Abdominal terga unspecialized. Supraanal plate strongly transverse, very narrow, hind margin convexly rounded; right and left paraprocts similar, large sclerotized plates (fig. 2). Subgenital plate symmetrical, hind margin with a deep, narrow excision medially, forming a pair of acute lobes, which (in pinned specimen) are contiguous forming a longitudinal keel-like ridge; styles similar, small, each located to the side of the lobes (fig. 4). Genitalia as in fig. 4: hook on the right side with a preapical incision; median phallomere with a large setal brush near its apex, and arising near the middle is a branch whose distal half is enlarged and setose; a narrow, curved, accessory median phallomere, lies under the median sclerotization; left phallomere consisting of several sclerites, one with some setae.

Female: Supraanal plate transverse, hind margin with a shallow indentation mesad, not reaching hind margin of the trigonal subgenital plate whose sides are upturned. Tegmina and wings fully developed, but reaching only slightly beyond end of abdomen.

Colour. — Head black with a narrow, transverse, yellowish white line between the eyes, just above the antennal sockets; lower half of clypeus and distal half of mandibles pale (fig. 3). Pronotum black bordered by a partly hyaline, whitish band which extends around the anterior and posterior margins, but laterally is submarginal (fig. 1). Tegmina with the humeral region whitish, and an inverted V-shaped yellowish white, sometimes partly hyaline macula, one arm whitish the other often yellowish; posterior to the V shaped macula is a whitish mark (with yellowish tinge along the margins) that usually does not extend to the wing margin (fig. 1). Wings infuscated, darker in the proximal half of the costal area just before a whitish, hyaline macula, and in the distal region of the anterior field (fig. 6). Abdominal terga black with small triangular white spots on the lateral margins of three or four medial segments. Abdominal sterna black with reddish spots (hyaline areas through which the underlying tissue is visible), basomedially on the subgenital plate and two of the preterminal segments. Coxae black, their apexes, and trochanters yellowish, femora and tibiae black, metatarsi brown, remaining tarsomeres similar or slightly darker. Cerci dorsally black with three terminal segments white, the acute apex

dark; ventrally dark except for a pale preterminal spot. The hind margin of the female's supraanal plate has a small white dot at the median invagination.

Measurements (mm) (♀ in parentheses). Length, 7.0-8.0 (7.0-9.0); pronotum length × width, 2.2-2.3 × 3.3-3.5 (2.2-2.4 × 3.3-3.6); tegmen length, 6.8-7.5 (6.5-7.2); interocular width, 0.9-1.0 (0.9-1.0).

Remarks. — According to Shelford (1906: 267) this species is abundant in decayed wood. He also stated that the almost cylindrical ootheca is carried by the female, with the keel uppermost (not rotated). This plus the fact that the male's genital hook is on the right side places the genus in the Pseudophyllophylodiinae.

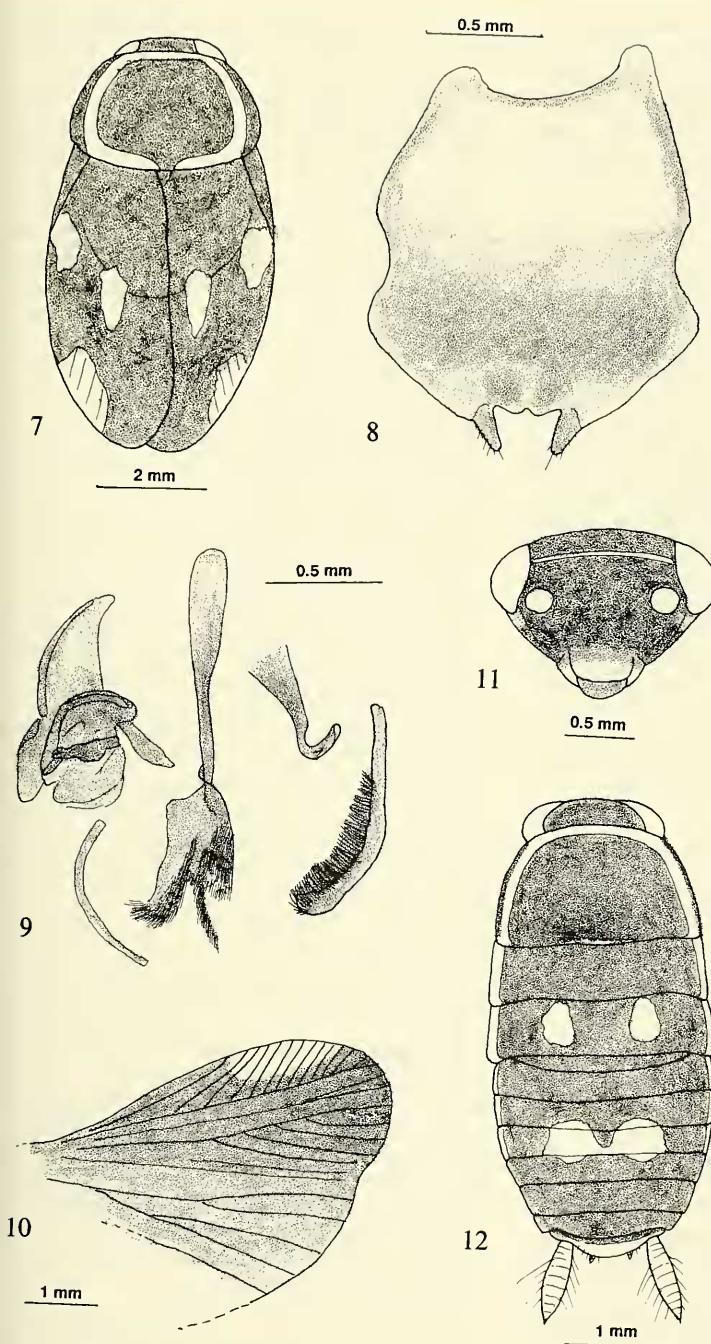
Sundablatta sexpunctata (Hanitsch)
(figs. 7-10)

Pseudophyllophylodioma sex-punctata Hanitsch, 1923a: 418, fig. 15 (male and female).

Sundablatta sexpunctata. — Hebard 1929: 76; Bruijning 1948: 89; Princis 1969: 932.

Material examined. — Lectotype (here designated), ♂, MALAYSIA, Selangor, collected 1907 and presented 1908 by H. C. Pratt; Type Orth. 267^{1/2}, in HECO. Paralectotype. MALAYSIA. HECO: Type Orth, 267^{1/2}, same locality as lectotype, ♂ (not ♀, as published) (terminalia slide 241), capt. 22.ii.1908 and pres. 1908 by G. Meade-Waldo. Additional material. — ANSP: Perak Hills, 2300-4000 ft., 1 ♀, 1903-229, H.N. Ridley (det. Hebard, 1927, and Uvarov). MCZC: Selan. Lima Blas Est., 1 ♀, 5.i.1975, J. Fleagle.

Redescription. — Male: Head exposed, interocular space about the same as the distance between antennal sockets. Pronotum suboval, widest behind the middle (fig. 7). Tegmina and wings reaching to end of abdomen, the former with oblique discoidal sectors. Hind wing with subcosta reaching to about middle of the costa, most costal veins thickened, radial vein straight, simple, media vein straight with one long and one short branch at distal end (left wing), or with one branch only (right wing of same specimen); cubitus vein straight with four or five complete (differs on the right and left wings of same specimen) and no incomplete branches, apical triangle absent (fig. 10). Front femur Type C₂; pulvilli only on the fourth tarsomere of all legs, tarsal claws symmetrical, simple, arolia small. Abdominal terga unspecialized. Supraanal plate transverse, convexly rounded, right and left paraprocts similar, simple plates. Subgenital plate symmetrical, styles small, similar, cylindrical, interstyilar margin with a small V shaped medial excision (fig. 8). Genitalia as in fig. 9: hook on the right side with a preapical incision; in addition there is a large setal brush on the right side; median phallomere broad proximally, becoming narrow, and with about the distal third modified with setal brushes; left phal-



Figs. 7-12. *Sundablatta* spp.
7-10, *Sundablatta sexpunctata* (Hanitsch) males from
Selangor, Malay Peninsula: 7, lectotype, habitus; 8-10,
paralectotype; 8, subgenital plate (dorsal); 9, genitalia
(dorsal); 10, hind wing. –
11, 12, *Sundablatta* sp.
male nymph from Sabah,
head and habitus respectively.

lomere consisting of several nonsetose sclerites.

Female (not seen): Hanitsch claimed to have described both the male and female, but the two type specimens are males. Hanitsch (1923a: 419) stated that he collected males and females on Bukit Kutu, Selangor, Gunong Kledang, Perak, and Penang Hill. The female apparently is undescribed, but its habitus is probably similar to the male.

Colour. — Shining black. Head black with a narrow, transverse, whitish line above the antennal sockets between the eyes. Pronotum shiny black bordered with a white, yellowish tinged encircling band which is submarginal laterally, and reaches the anterior and posterior margins, the latter narrowly interrupted medially (fig. 7). Tegmina black each with three maculae: the most anterior one (white and orangish) in the center of the marginal field, the second (white) elongate, in the middle, and the most posterior one (hyaline, through which a white macula in the costal vein region of the hind wing is visible) reaches the wing margin (fig. 7). Hind wing infuscated, with a white macula on the thickened parts of the costal veins (fig. 10). Coxae, femora, and tibiae black, tarsi reddish brown. Cerci dorsally with apical segment black, penultimate segment white, the preceding one with white laterally on one side, remaining cercomeres black, ventral surface black.

Measurements (mm). — Length, 6.8-7.5; pronotum length \times width, 2.2 \times 3.4-3.5; tegmen length, 5.5-5.9; interocular width, 0.9-1.0.

Sundablatta raapi (Hanitsch)

Allacta raapi Hanitsch, 1932a: 66, fig. 8 (♀); Princis, 1969: 1013 (sp. *incertae sedis*). — Holotype [not examined]: ♀, Batu Island, W. Sumatra, 1896-7, H. Raap; in the Genova Museum, Italy.

?*Pseudoceratinoptera raapi* (Hanitsch). — Bruijning 1948: 88. *Sundablatta raapi* (Hanitsch). — Roth 1993: 387.

Description (after Hanitsch). — Female: Head freely exposed. Pronotum subparabolic. Tegmina and wings not quite reaching end of abdomen, discoidal sector of former oblique. Hind wing with simple radial and media veins, cubitus with four branches. Front femur unarmed.

Colour. — Head deep amber, with a transverse white line between the eyes and antennal sockets. Pronotum deep amber with a broad, horseshoe shaped white line that extends from the posterior corners, submarginally along the lateral and marginally around the anterior margins; the white line is absent from along the hind margin of the pronotum. Tegmina amber with two lighter patches, one in the center, the other near the distal end of the anterior border. Wings dull orange, costal area with a large whitish patch. Abdomen light castaneous to dark am-

ber. Cerci brownish with whitish tips. Legs dark amber.

Total length, 9.0 mm.

Remarks. — Hanitsch's habitus drawing, and description of the head and pronotal colour pattern, the reduced tegmina (with its pale markings) and wings, convinces me that this species belongs in *Sundablatta*. Although Hanitsch claimed the front femur is unarmed he may not have seen the piliform spinules (which are difficult to detect along the black femur), or he did not consider the spinules as 'armament'.

Sundablatta sp.

(figs. 11, 12)

Material examined. — SABAH. RMNH: Malaysia, Sabah, LPS-L, Semado trail nr. Borden, 115.40°E 4.20°N, 1520 m, 1 ♂ nymph, 22-24.x. 1986, J. Huisman.

Description. — Nymph (male; habitus, fig. 12): Head exposed, interocular space greater than the distance between antennal sockets (fig. 11). Pronotum parabolic, hind margin almost straight (fig. 12). Tegmina and wings absent (fig. 12). Front femur with a row of piliform spinules, terminating in one large spine (Type C); pulvilli on fourth tarsomere of all legs, tarsal claws symmetrical, simple, arolia present. Supraanal plate strongly transverse, very narrow, hind margin convexly rounded, entire.

Colour. — Head black with a fine white line between the eyes, distal part of clypeus pale, labrum dark (fig. 11); antennae yellowish, maxillary palps pale. Thorax and abdominal terga black with the following markings: pronotum with a yellowish (and whitish tinge) horseshoe shaped band, hind margin with a very fine, partly incomplete, whitish line; the yellow band of the pronotum continues along the lateral margins of the meso and metanotum, the latter with a pair of large, slightly irregular, round, medial yellow maculae. Abdominal terga two to four with a narrow yellow marginal stripe; abdominal tergum four with a pair of broad yellow maculae which are connected on the hind margin of the segment, the yellow colour narrowly overlapping the posterior margin of segment three and the anterior margin of segment four; distal half of supraanal plate yellow (fig. 12). Abdominal sterna dark brown. Femora and tibiae dark brown, tarsi pale. Cerci yellow on both surfaces, their acute apexes dark.

Adults. — Unknown.

Measurements (mm). — Length 4.8; pronotum length \times width, 1.3 \times 2.2.

Remarks. — This species is either the immature of one of the known species of *Sundablatta*, or it may prove to be a new taxon when the adult is found.

Sundablatta sp.

Sundablatta pulcherrima. — Princis 1950: 178 (female) (not Shelford).

Material examined. — SUMATRA. ZILS: Sumatra, Tandjong, Sakti, 1 ♀, Mrs. M.E. Walsh (det. as *pulcherrima* by Princis).

Description. — Head with interocular width the same as the distance between antennal sockets; fifth maxillary palpomere swollen, longer than the fourth segment; antennae filamentous. Tegmina and wings equally developed but somewhat reduced reach to about the supraanal plate. Pronotum flattened, subelliptical, widest near the hind margin. Front femur Type C₂, pulvilli on fourth tarsomere of all legs, tarsal claws symmetrical, simple, arolia present. Hind wings with simple radial vein, median vein apparently absent, cubitus vein with one or two complete and no incomplete branches, apical triangle absent. Supraanal plate transverse, hind margin convexly rounded with a distinct medial excavation.

Colour. — Head and pronotal markings as in *pulcherrima* (figs. 1, 3). Mesonotum black, metanotum brown. Tegmina black proximally becoming brown distally and with some clear areas apically and with two narrow yellowish stripes, one near the subcostal area and the other shorter one to its left and partly posterior to it. Hind wings darkly infuscated, and with a white macula in the costal area (as in fig. 6). Abdominal terga on distal half of the abdomen brown, only two of these segments with yellowish spots on their lateral margins, segments on posterior half of abdomen blackish. Abdominal sterna blackish brown. Coxae dark brown, trochanter yellowish, femora dark brown, tibiae lighter brown, tarsal segments lighter.

Measurements (mm). — Length, 8.5; pronotum length × width, 2.4 × 3.7; tegmen length, 5.4; interocular width, 1.0.

Remarks. — Princis identified this specimen as *S. pulcherrima*. However, the tegminal markings markedly differ (the anterior tegminal macula is not an inverted V-shape), whereas more than 20 specimens of *pulcherrima* that I have examined have markings similar to that shown in fig. 1. Abdominal terga and sterna, and legs also differ in colour. The tegminal and pronotal markings of this specimen differ from those of *sexpunctata* (fig. 7) and *raapi* (see description).

Pseudophyllodromia Brunner

Pseudophyllodromia Brunner, 1865: 111. — Hebard 1929: 76.

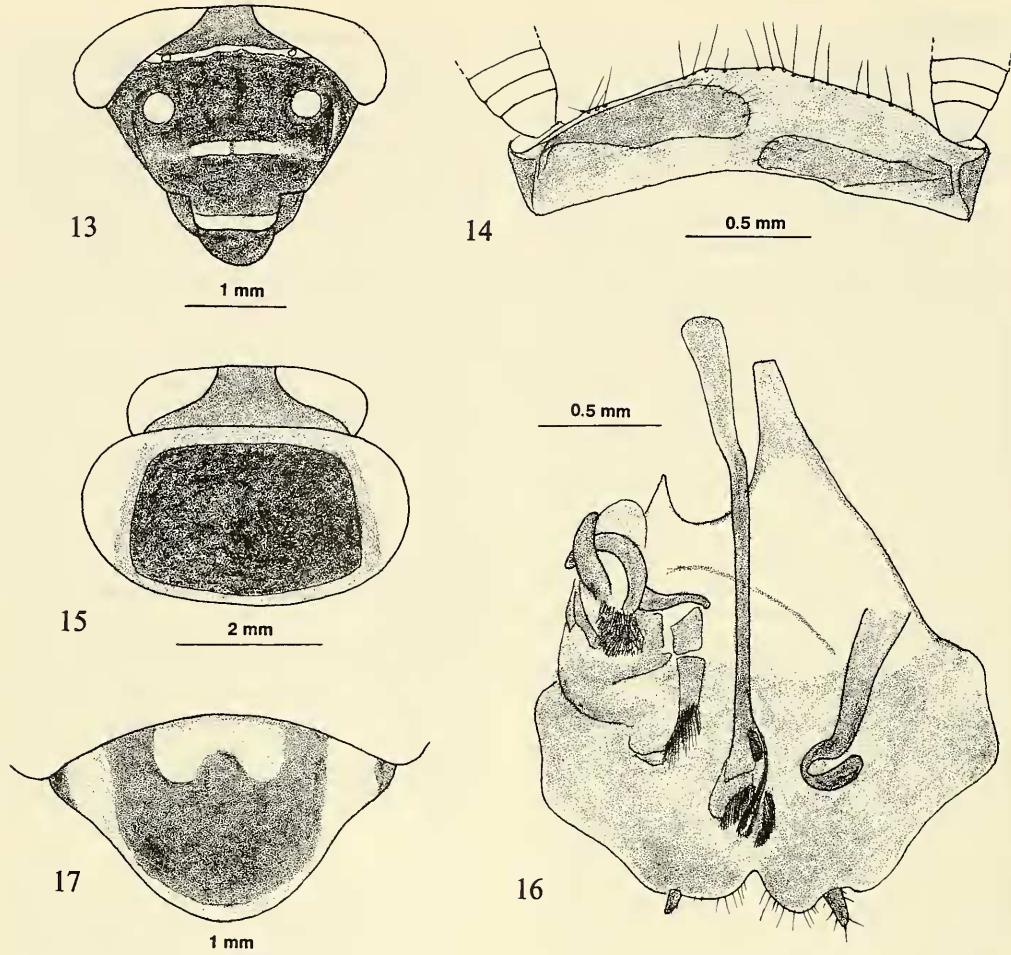
Type species: *Pseudophyllodromia ornata* Brunner, by monotypy.

Diagnosis (after Hebard). — Head broad, projecting beyond the pronotum. Interocular space narrow. Pronotum transverse trapezoidal with rounded angles. Tegmina and wings fully developed, discoidal sectors of former longitudinal. Costal vein area of hind wing broad. Anteroventral margin of front femur with proximal heavy spines, succeeded by a row of piliform spines, terminating in three elongate distal spines (Type B₃); median tarsi with small pulvilli on four proximal tarsomeres. Male abdominal terga unspecialized. Subgenital plate of the *Mareta* [= *Balta*] type.

To the above can be added the following: Interocular space distinctly less than the distance between the antennal sockets, and the eyes do not extend below them (fig. 13). The pronotum usually is more subelliptical than trapezoidal (fig. 15). Discoidal sectors of the tegmina may be longitudinal, oblique, or intermediate between the two (i.e., sublongitudinal); the veins may be longitudinal on one tegmen and oblique on the other, in the same specimen. The cubitus vein of the hind wing with three to five complete rami (figs. 38, 51), and rarely with an incomplete branch (fig. 48), apical triangle absent. The front and mid tarsi with pulvilli on four proximal tarsomeres, hind tarsus with a pulvillus on the fourth tarsomere only; tarsal claws symmetrical, simple, arolia present. The subgenital plate usually is not *Balta*-like. Male genital hook on the right side; median genital phallomere with setal modifications at the distal end.

Key to adults of *Pseudophyllodromia*

1. Face without pale markings (exclusive of a pale band on the clypeus) (figs. 22, 25)..... 2
- Face with pale markings 5
- 2(1) Last maxillary palpomere white. Pronotal disk macula subtrapezoidal, the oblique margins highlighted with a narrow yellowish band (fig. 23) (♂ & ♀); male genitalia as in fig. 21 *laticeps*
- Last maxillary palpomere dark brown. Pronotal disk macula not as above 3
- 3(2) Anterior margin of pronotal disk macula suddenly narrowed and reaching the anterior margin of the pronotum, broad lateral zones yellowish white (fig. 26) *mentawiensis*
- Pronotal disk macula not as above 4
- 4(3) Pronotal disk macula reaching the hind margin of the pronotum, lateral and anterior zones subhyaline yellowish (fig. 30). Male genitalia as in fig. 32 *simalurensis*
- Pronotal disk macula trapezoidal, completely surrounded by opaque yellowish (fig. 42) *aronsoni*
- 5(1) Face blackish brown with a very narrow



Figs. 13-17. *Pseudophyllodromia ornata* Brunner from Zamboanga, Mindanao, Philippine Islands. 13-16 males: 13, head; 14, supraanal plate and paraprocts (ventral); 15, pronotum; 16, subgenital plate and genitalia (dorsal); 17, female, subgenital plate (ventral).

transverse, yellow stripe between the eyes above the antennal sockets, and a broader band on the frons (fig. 13). Pronotal disk macula black, completely surrounded by a yellow band (fig. 15) (δ & φ). Male interstyler margin with a symmetrical V-shaped excision (fig. 16). Female subgenital plate with a large, inverted U shaped yellow macula anteromedially (fig. 17) *ornata*
 Facial markings, female subgenital plate colour pattern, and male interstyler margin (if known), not as above 6

6(5) Face with variable patterns of yellow, and

light and dark brown maculae (e.g. fig. 35). Pronotal disk macula black, its anterior border margined with white, sometimes with pale margined posteriorly, and incompletely laterally (fig. 37) (δ & φ). Male interstyler margin with a deep, asymmetrical, curved excavation (fig. 39) *laticaput*
 Region above the antennal sockets with a curved, whitish band above the antennal sockets. Male interstyler margin not as above 7
 Curved whitish band on head poorly delineated, blending into the yellowish orange face

(fig. 46). Pronotal disk macula not clearly delineated, blending into yellowish anterior and posterior margins (fig. 47) (δ & φ). Male interstylar margin with a broad, asymmetrical, V-shaped excision (fig. 49). Female subgenital plate without distinct dark maculae (fig. 52) *laeta*
 Curved whitish band on head more sharply delineated (fig. 53). Pronotal disk macula black, sharply delineated, completely surrounded by yellow (fig. 54). Female subgenital plate with dark maculae (fig. 55) *poensis*

***Pseudophyllodromia ornata* Brunner**
 (figs. 13-17)

Pseudophyllodromia ornata Brunner, 1865: 112, pl. 3, fig. 9.
 Holotype [not examined]: φ , Philippines (coll. Dohrn.); according to Ulrike Aspöck (personal communication) it is in Dohrn Mus. f. Naturk., Stettin (=Szczecin), Poland.
 — Walker, 1869: 144; Kirby, 1904: 97; Shelford, 1908: 16.

Material examined. — PHILIPPINES. HECO: Zamboanga, Mindanao, 1 δ (terminalia slide 242), 1 φ , Baker. ANSP: Port Banga, 3 δ , 5.i.1915, 1 δ , 8.i.1915, 1 φ , 14.i.1915, 2 φ , 13.i.1911, W. Boettcher (all labelled *ornata* by Princis, 1960); Todaya Plateau, Mt. Apo, Mindanao, 4000 ft., 1 φ , 8.x.1930, C.F. Clegg; Davao, Mindanao, 1 φ (labelled topotype by Hebard); Baker; Mumungan, Lanao, Mindanao, 1 φ , 21.ii.1915, W. Boettcher; Surigao, Mindanao, 1 δ (labelled topotype by Hebard). Two specimens retained in the MCZC.

Description. — Male (previously undescribed): Head exposed, interocular space distinctly less than the distance between antennal sockets, eyes do not extend below small antennal sockets (fig. 13). Pronotum subelliptical (fig. 15). Tegmina and wings fully developed extending well beyond end of abdomen (glued together and could not be spread). Front femur Type B, with two large proximal spines; pulvilli on four proximal tarsomeres of front and mid legs, only on fourth tarsomere of hind leg, tarsal claws symmetrical, simple, arolia present. Supraanal plate strongly transverse, hind margin narrowly truncate at apex; paraprocts simple plates (fig. 14). Subgenital plate symmetrical with a pair of widely separated small styles, the right one larger, interstylar margin with a symmetrical V-shaped emargination (fig. 16). Genitalia as in fig. 16: hook on the right side; apex of median phallomere modified with small setal brushes; left phallomere composed of several sclerites and some setal brushes.

Colour. — Head with occiput dark reddish, remainder blackish brown with three transverse yellow stripes as follows: a narrow one between the ocellar spots, a broader one across the middle of the frons, and a third on the distal half of the clypeus (fig. 13);

basal parts of maxillary palpomeres three and four dark, remainder pale, last segment black. Pronotal disk with a subrectangular black macula which is completely surrounded by a yellow band, remaining lateral portions subhyaline (fig. 15). Tegmina dark reddish brown, narrowing beyond the anal veins to the rounded apex; the yellow from the pronotum continues as a narrow margin along the dark reddish brown region, with the humeral area and distal region of the costal veins hyaline. Abdominal terga dark brown. Abdominal sterna mostly brown, mottled with light areas. Front femur with dark basal and apical maculae, mid and hind coxae mostly dark brown, rest of legs a mixture of light and dark brown. Cerci dorsally with six basal segments dark brown succeeded by four partly yellowish and brown cercomeres, the remaining two segments brown, ventrally dark brown with a pale apical spot.

Female: Supraanal plate strongly transverse with a medial V-shaped emargination, the margins on either side of the V, thickened, yellow. Subgenital plate laterally yellow, with a broad medial, dark brown macula containing an inverted U-shaped yellow mark on the anterior half (fig. 17). Front femur blackish brown on anterior surface, mid femur dark brown on upper half, remainder pale.

Measurements (mm) (φ in parentheses). Length, 9.0-10.0 (8.5-10.6); pronotum length \times width, 2.3-2.6 \times 4.0-4.3 (2.2-2.6 \times 4.1-4.5); tegmen length, 10.0-10.2 (8.1-10.1); interocular space, 0.6 (0.7).

Remarks. — Princis (1950: 180, fig. 27) described what he believed to be *ornata* (from Borneo), but the specimen was *laticaput* (fig. 39) (cp. with *ornata*, fig. 16).

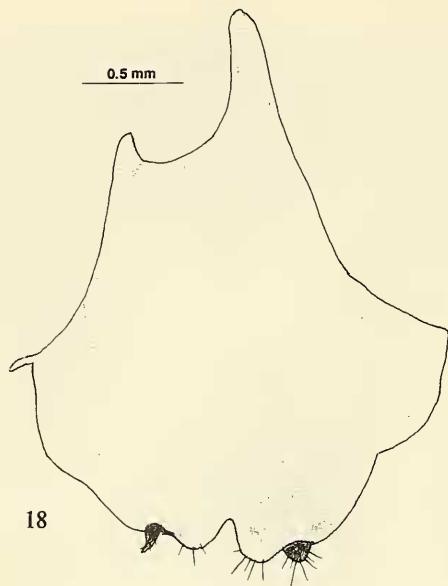
***Pseudophyllodromia laticeps* (Walker)**
 (figs. 18-24)

Blatta laticeps Walker, 1869: 142 (φ).

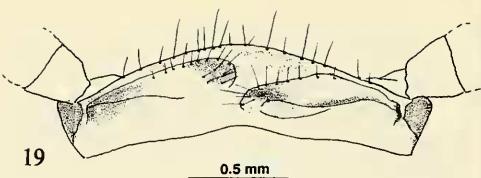
Phyllodromia laticeps (Walker). — Kirby 1904: 91; Hanitsch 1919: 67.

Pseudophyllodromia laticeps (Walker). — Shelford (1906) 1907: 495; 1908: 17, pl. 1, fig. 8 (exclusive of synonymy); Hanitsch 1915: 60, syn. excl. *laticaput* (the male is *laticaput*); 1919: 72; 1923a: 417, 464; 1925: 77, 89; 1928: 29, 42 (in part; misidentification of *mentawiensis*); 1931: 42, 45; 1932b: 51, 64; 1933a: 312, 313, fig. 6; Hebard 1929: 77; Bruijning 1948: 89; Princis 1969: 932.

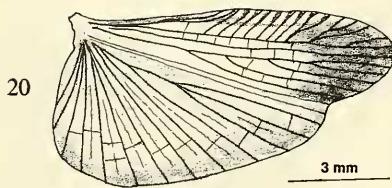
Material examined. — Holotype, φ , Singapore, Wallace, E. coll. (1830-73), W.W. Saunders, purchased and pres. '73, by Mrs. F. W. Hope; Type Orth. 110, in HECO. Additional material. — SINGAPORE: ZILS: Singapore, forest near Macritchie reservoir; slow moving on foliage at lift, *Pseudophyllodromia* sp., 1 φ , 2.ii.1968, D.H. Murphy. MALAYSIA. ANSP: Kuala Teku, Pahang, 500-700 ft., 1 δ , 4.xii. 1921, F.N. Chasen. MCZC: The following were collected by D. Furth: Kuala Lompat, 1 δ , 26.viii.1992; Universiti Kebangsaan Malaysia, campus, 2 δ , 1 φ , 30.viii.1992.



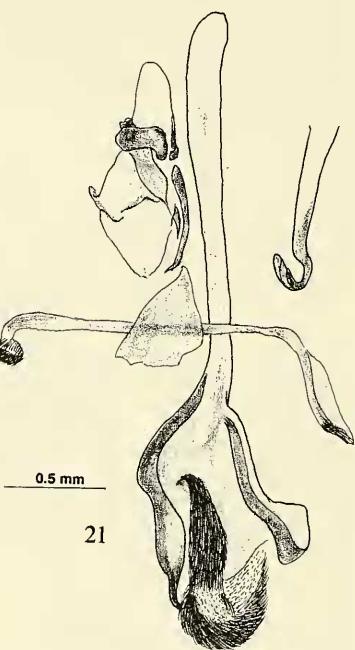
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Figs. 18-21. *Pseudophyllodromia laticeps* (Walker) male from Kuching, Sarawak: 18, subgenital plate (dorsal); 19, supraanal plate and paraprocts (ventral); 20, hind wing; 21, genitalia (dorsal).

Sarawak. ANSP: Kuching, N.W. Borneo, 1♂ (terminalia slide 429), 29.i.1900, 1♂, 6.ix.1900, 1♂, 19.ix.1899, Dyak coll., pres. 1900 by R. Shelford, 1♂, Cornell U., lot 466; no exact locality, 1♀ (labelled *P. laticeps* by Hebard, 1928, and Uvarov). Most of these specimens were reported by Hebard (1929: 77). One male retained in MCZC.

Description. — Male (previously undescribed): Head partly or completely exposed, eyes do not extend below the antennal sockets; interocular space less than the distance between antennal sockets (as in ♀, fig. 22). Pronotum transverse, subelliptical, widest about the middle. Tegmina and wings fully developed extending beyond the end of the abdomen, the former with sublongitudinal discoidal sectors. Hind wing with most costal veins distinctly clubbed, radial vein straight, simple, media and cubitus veins

straight, the former simple, cubitus with four complete and no incomplete branches, apical triangle absent (fig. 20). Front femur Type B, with two large proximal spines; pulvilli on four proximal tarsomeres of front and mid legs, hind tarsus with a pulvillus on the fourth tarsomere only, tarsal claws simple, symmetrical, arolia small. Abdominal terga unspecialized. Supraanal plate transverse, hind margin convexly rounded, right and left paraprocts similar, simple plates (fig. 19). Subgenital plate weakly asymmetrical, hind margin with a median excavation and a pair of small dissimilar styles of equal length, the right one round, bulbous, the left one curved, tapering to an acute apex (fig. 18). Genitalia as in fig. 21: hook small, on right side, with a preapical incision; distal half of median phallomere strongly modified with se-

tose and sclerotized structures; left phallomere consisting of several sclerites; a narrow sclerite modified at both ends lies transversely across the median phallomere.

Colour. — Head yellowish brown or reddish brown, labrum blackish brown or black; third maxillary palpomere dark basad and along dorsal margin, the remainder and segments four and five white; labial palpi blackish. Pronotal disk with a broad macula that usually extends to both the anterior and posterior margins, laterally highlighted by a narrow whitish stripe, lateral border region hyaline (see female, fig. 23). Tegmina hyaline, light to dark brown, anterior border region whitish. Hind wing with clubbed region of costal veins yellow, remainder unevenly infuscated, darkest (sometimes black) at the posterior region of the anterior field. Abdominal terga dark brown, lateral edges yellowish. Abdominal sterna yellowish brown, with some dark lateral infuscation, their hind margins with a narrow, medially interrupted white line. Cerci dorsally with basal four segments dark brown, remaining cercomeres in part or completely whitish, ventrally dark. Legs pale.

Female: Head completely exposed beyond pronotum (fig. 23); interocular space distinctly less than the distance between ocellar spots and antennal sockets both of which are very small (fig. 22). Pronotum subelliptical (fig. 23). Tegmina and wings fully developed, reaching beyond end of abdomen, discoidal sectors of former sublongitudinal. Anteroventral margin of front femur with three heavy proximal spines, succeeded by a row of piliform spinules, terminating in three large spines (Type B₃); pulvilli present on four proximal tarsomeres of front and mid tarsi (hind tarsi missing), tarsal claws symmetrical, simple, arolia present. Supraanal plate strongly transverse, narrow, hind margin with a small, median excavation.

Colour. — Head reddish, without markings, labrum dark brown (fig. 22); third maxillary palpomere dark brown dorsad, remainder pale, segments four and five white; labial palpi black. Pronotal disk with a dark reddish brown, subtrapezoidal macula extending from the anterior to the posterior margins, the weakly oblique lateral margins highlighted by a narrow yellowish-white or white stripe, the remaining narrow lateral region hyaline (fig. 23). Colour of tegmina the same as the pronotal disk, with the yellowish white stripe continuing along the anterior border of the wing cover. Abdominal terga dark brown, the lateral margins narrowly pale. Abdominal sterna with a brownish macula laterally, the intermediate zones yellowish brown, the hind margins narrowly white as in the male; subgenital plate yellowish on basal half, the distal half and anterolateral corners dark brown to black (fig. 24). Coxae infuscated on basal halves, femora pale with a dark brown macula

apically.

Measurements (mm) (♀ in parentheses). Length, 7.6-10.1 (8.4-9.4); pronotum length \times width, 2.2-2.3 \times 3.7-3.9 (2.0-2.4 \times 3.5-3.9); tegmen length, 9.8-10.5 (8.0-8.8); interocular width, 0.5 (0.5-0.6).

Pseudophyllodromia sp.

Material examined. — SINGAPORE. ZILS: Nee Soon Swamp Forest, 2♀ (1 carrying an ootheca in the vertical position almost completely surrounded by the intersternal fold), 3.iv.1968, D.H. Murphy; Bukit Timah Nat. Res., Singapore, 1♀, pitfall A, Eth. Glycol, 3.iv.1967.

Description. Female: Head with interocular space less than the distance between antennal sockets. Pronotum subelliptical. Tegmina and wings fully developed reaching beyond the end of the abdomen, the former with almost longitudinal discoidal sectors. Hind wing with five proximal costal veins clubbed, radial and media veins simple, straight, cubitus vein with five complete and no incomplete branches, apical triangle subobsolete. Front femur Type B₃ with three large proximal spines; fore and mid legs with pulvilli on tarsomeres two to four (absent on segment one), hind tarsus with a pulvillus on the fourth segment only.

Colour. — Head occiput with four dark narrow longitudinal stripes separated by lighter narrow bands, a narrow zone of the vertex pale, rest of head dark with variable number (and size) of small yellowish markings. Pronotal disk black, completely surrounded by whitish zone. Tegmina reddish hyaline, anterior border region whitish, subcostal vein dark. Hind wing infuscated, the distal region of the anterior field somewhat darker. Legs with coxae and femora (more so on anterior surface) dark brown. Dorsal surface of the cerci with proximal segments dark, remainder pale, ventrally dark.

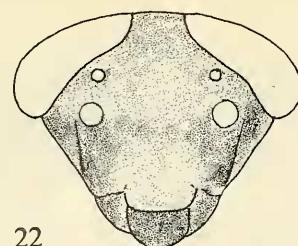
Measurements (mm). — Length, 8.2-8.3; pronotum length \times width, 2.1-2.2 \times 3.6-3.8; tegmen length, 7.7-8.0; interocular width, 0.4.

Remarks. — These specimens were sent to me identified as *P. laticeps*. The pale markings on the face, differences in number of pulvilli, and the slight difference in interocular width, suggest that it is a different species or a colour morph of *laticeps*. The discovery of males may help solve this problem.

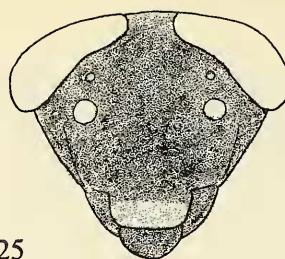
Pseudophyllodromia mentawiensis Hanitsch (figs. 25-28)

Pseudophyllodromia mentawiensis Hanitsch, 1933a: 313 (♀). — Bruijn 1948: 90.

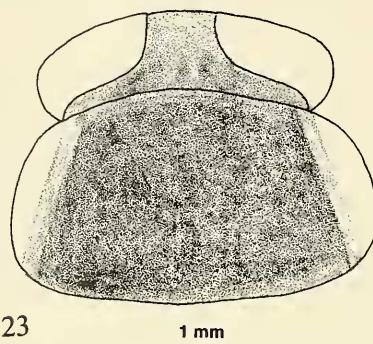
Pseudophyllodromia laticeps (nec Walker, 1868). — Hanitsch 1928: 29 (in part); Princis 1969: 933.



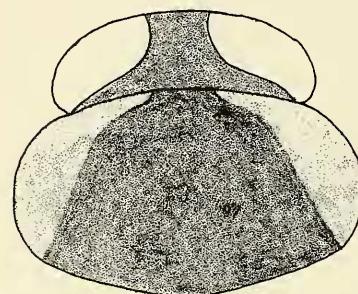
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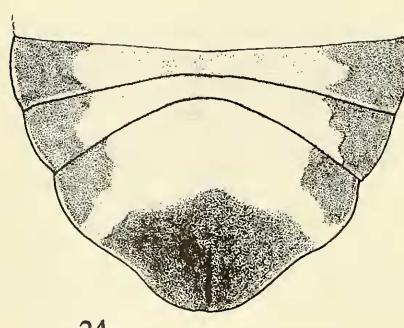
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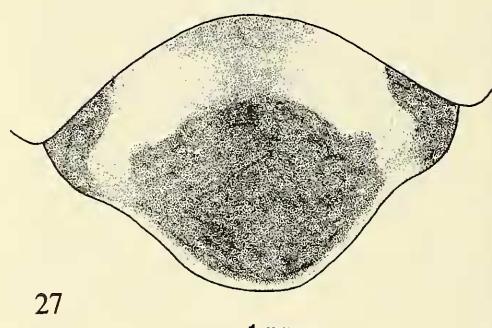
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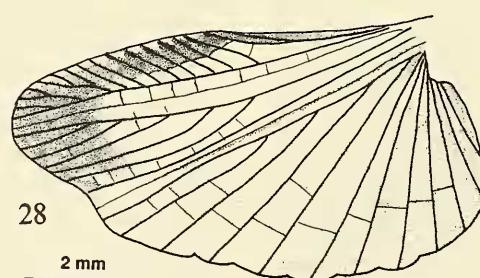
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Figs. 22-28. *Pseudophyllodromia* spp. 22-24, *P. laticeps* (Walker), female holotype: 22, head; 23, pronotum; 24, terminal abdominal sternita. — 25-28, *P. mentawiensis* Hanitsch, females: 25, head; 26, pronotum; 27, subgenital plate, 28, hind wing.

Material examined. — Lectotype (here designated): ♀, MENTAWE [Al], Siberuet, 13.ix.1924, H.H. Karny. Type Orth. 343 $\frac{1}{4}$, in HECO. Paralectotypes, HECO: same locality and collector as lectotype, with different type numbers and dates: ♀, 343 $\frac{3}{4}$ (carrying ootheca in the vertical position), 20.ix.1924, ♀, 343 $\frac{1}{4}$, 20.ix.1924, ♀, 343 $\frac{1}{4}$, 15.ix.1924.

Description. — Female: Head exposed, interocular space decidedly less than the distance between minute ocellar spots, and small antennal sockets; eyes do not extend below the antennal sockets (fig. 25). Pronotum subelliptical, widest at about the middle (fig. 26). Tegmina and wings fully developed extending well beyond end of abdomen, the former with longitudinal discoidal sectors. Hind wing with the proximal six costal veins clubbed, radial and media veins simple, straight, cubitus vein weakly concave with five complete and no incomplete branches, apical triangle absent (fig. 28). Front femur Type B₃, with two large proximal spines; pulvilli on four proximal tarsomeres of front and mid legs, only on fourth tarsomere of hind leg, tarsal claws symmetrical, simple, arolia present. Supraanal plate strongly transverse, very narrow, hind margin with a shallow medial indentation. Subgenital plate extending well beyond hind margin of supraanal plate.

Colour. — Head very dark reddish brown, distal half of clypeus yellowish (fig. 25); third maxillary palpomere with pale and brown zones, segment four pale, terminal segment dark brown. Pronotal disk very dark reddish brown extending narrowly from the anterior margin, to broadly at the hind margin, lateral regions yellowish white (fig. 26). Tegmina the same colour as the pronotum with the yellowish white portion continuing but becoming narrower along the anterior margin of the wing cover. Hind wing with apical region of the costal veins whitish, distal region of anterior field darkly infuscated, posterior field lighter (fig. 28). Abdominal terga dark reddish brown, exposed dorsal surface of the subgenital plate yellow. Abdominal sterna dark brown with lateral and hind margins narrowly yellow, or with the medial region yellow with broad lateral zones brown (resembling fig. 24); subgenital plate with about basal third yellow, distal two thirds and anterolateral corners dark brown (fig. 27; the extent of dark brown is variable). Coxae infuscated, femora light to dark brown, tibiae and tarsi light brown.

Male: Unknown.

Measurements (mm). — Length, 9.0-9.5; pronotum length \times width, 2.2-2.5 \times 4.0-4.2; tegmen length, 9.0; interocular space 0.6.

Pseudophyllodromia simalurensis sp. n.

(figs. 29-34)

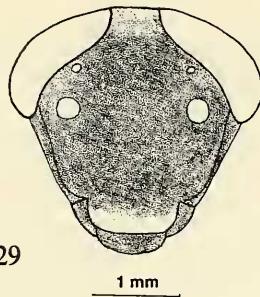
Pseudophyllodromia laticeps (not Walker, 1869). — Hebard, 1929: 77 (misidentification).

Type material. — Holotype, ♂ (terminalia slide 430), Lasikin, Simalur Island, Sumatra, iv.1913, E. Jacobson; in ANSP.

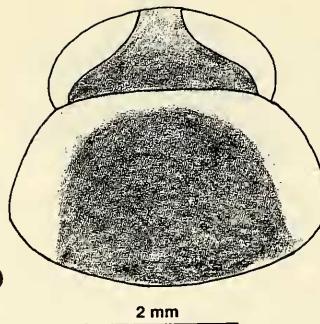
Description. — Male: Head with interocular space considerably less than the space between the antennal sockets; eyes do not extend below the antennal sockets (fig. 29). Pronotum subtrapezoidal, widest behind the middle (fig. 30). Tegmina and wings fully developed extending beyond end of abdomen, the former with oblique discoidal sectors. Hind wings with costal veins not distinctly clubbed (several may be slightly thickened on distal halves); radial and media veins straight, simple, cubitus vein weakly curved with four complete and no incomplete branches, apical triangle absent (fig. 33). Front femur Type B₃ with two large proximal spines; pulvilli on four proximal tarsomeres of front and mid legs, only on the fourth tarsomere of the hind legs, tarsal claws simple, symmetrical, arolia small. Abdominal terga unspecialized. Supraanal plate transverse, hind margin convexly rounded, right and left paraprocts simple plates (fig. 34). Subgenital plate asymmetrical, styles cylindrical, dissimilar, the right one slightly larger, interstyler margin asymmetrically excavated (fig. 31; the subgenital plate shown in the figure was flattened in the slide preparation so that the styles are wide apart; in the pinned specimen the interstyler margin looks like a narrow slit with the styles closer together). Genitalia as in fig. 32: genital hook on the right side with a preapical incision and very narrow neck; distal region of median phallomere with two branches, one terminating in a setal brush, the main rod apically rounded and darkly sclerotized and with a membrane covered with minute spicules; a slender transverse bar lies transversely under the median phallomere; left phallomere consisting of several nonsetose sclerites.

Female: Unknown.

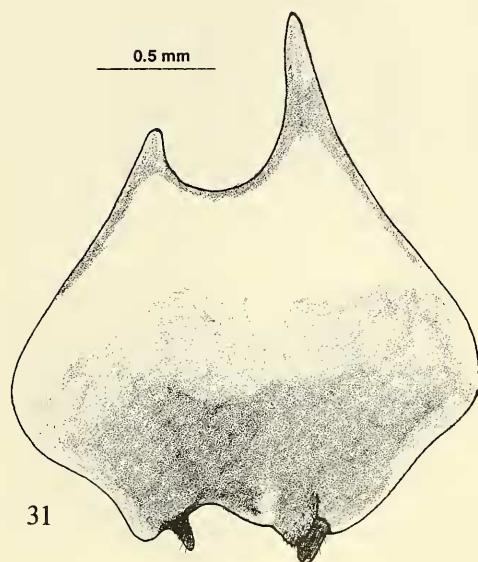
Colour. — Vertex light reddish, rest of face dark red, distal half of clypeus pale, labrum dark (fig. 29); maxillary palpomeres three and four yellowish, fifth segment dark brown. Pronotal disk with a large subtrapezoidal, blackish macula which does not reach the front margin of the pronotum whose lateral and narrower anterior zones are semihyaline, yellowish (fig. 30). Tegmina reddish brown hyaline, anterior margins whitish. Hind wing unevenly infuscated, darkest along the distal halves of the costal veins and the apical region of the anterior field, remaining part of the field colourless, posterior field comparatively lightly, evenly darkened (fig. 33). Abdominal terga dark brown, lateral edges yellowish. Abdominal sterna brown laterally, hyaline and yellowish (due to visibility of underlying tissue) medially. Basal halves of coxae dark brown, remaining parts of legs yellowish brown.



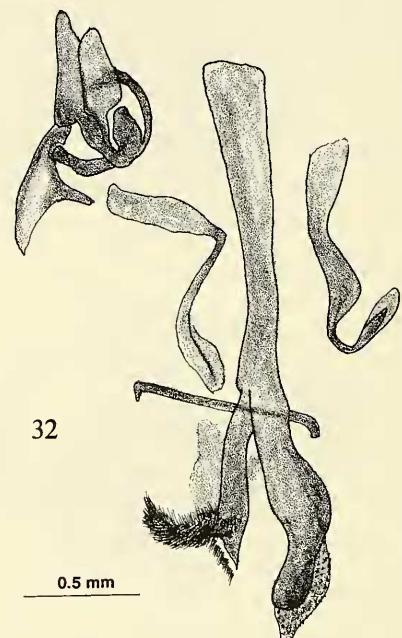
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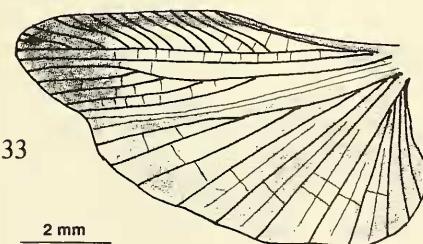
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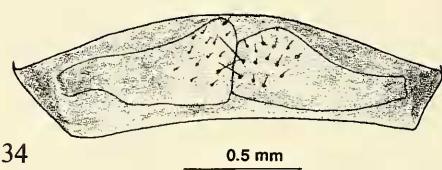
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Figs. 29-34. *Pseudophyllodromia simalurensis* sp. n., male holotype; 29, head; 30, pronotum; 31, subgenital plate (dorsal); 32, genitalia (dorsal); 33, hind wing; 34, supraanal plate and paraprocts (ventral).

Measurements (mm). — Length, 9.5; pronotum length \times width, 2.6 \times 4.1; tegmen length, 9.8; interocular space, 0.5.

Etymology. — The specific name refers to the island on which the species was collected.

Remarks. — The modification of the distal region of the median genitalia phallomere of *simalurensis* suggests a close relationship with *laticeps* and *laticaput*.

Pseudophyllodromia laticaput (Brunner)
(figs. 35-40)

Phyllodromia laticaput Brunner, 1898: 205, pl. 16, fig. 8 (♂). Syntypes (not examined): ♂, Borneo, Brunei; Baram stream; 'Bangui' Island; in NMWA. — Kirby 1904: 93; Shelford 1906: 267 (incorrectly synonymized under *laticeps*); 1908: 17 (incorrectly synonymized under *laticeps*).

Pseudophyllodromia laticaput (Brunner). — Hanitsch 1933a: 311, fig. 5; 1933b: 232; Bruijning 1948: 90; Princis 1969: 933.

Pseudophyllodromia ornata (not Brunner, 1865). — Princis 1950: 180, fig. 27 (♂).

Material examined. — SABAH. RMNH: Malaysia SE. Sabah, Danum Valley Field C, E3, c. 175 m, Mal. trap, 1♂ (terminalia slide 159), 15-25.iii.1987, C. v. Achterberg; Keningau area, Nabawan (Site C), podzol forest, 2 human excrement traps, alt. 0450 m, 1♂, 14-17.xi.1987, Krikken & Rombaut. KALIMANTAN. RMNH: Biv. Long Hoet, M.O. Borneo Exp., 1♂, 16-20.viii.1925, H.C. Siebers. The following were collected by A.M.R. Wegner: E. Borneo, Tabang, Bengen River, 125 m, 1♂, 1♀, 25.ix.1956, 1♀, 2.x.1956; E. Borneo, Gunungsari, 95 m, 1♀, 14.viii.1956. Two specimens retained in the MCZC. ZILS: The following were collected by Mrs. M.E. Walsh: O. Borneo, Samarinda, 1♀, vi.1938; O. Borneo, Pelawan Basir, 1♂, vi.1937.

Redescription. — Male: Head completely exposed (fig. 37), interocular space less than distance between antennal sockets (fig. 35). Pronotum with anterior margin straight, laterally convex, hind margin convex (fig. 37). Tegmina and wings fully developed, extending well beyond end of abdomen, the former with longitudinal discoidal sectors. Hind wing with proximal costal veins thickened distad, radial and media veins simple, cubitus vein weakly curved, with four to five complete and no incomplete branches, apical triangle absent (fig. 38). Front femur Type B₃, with three large proximal spines; front and mid tarsi with pulvilli on four proximal tarsomeres, hind tarsi with a pulvillus on the fourth tarsomere only, tarsal claws symmetrical, simple, arolia small. Abdominal terga unspecialized. Supraanal plate transverse, distal part of hind margin truncate; right and left paraprocts similar, broad, sclerotized plates (fig. 36). Subgenital plate asymmetrical, styles short, right one slightly stouter, interstyłar margin with a deep, curved excision to the left of the midline (fig. 39). Genitalia as in

fig. 39: small hook on the right side, without a distinct preapical incision; median phallomere broad, distally modified with setal brushes, and with an apically setose branch arising beyond the middle; a curved accessory median phallomere terminates in a setal brush; left phallomere composed of nonsetose sclerites.

Colour. — Head with reddish occiput, face with highly variable patterns of yellow, and light and dark brown markings (fig. 35); maxillary palpomeres three and four white with a small, dark, basal spot, terminal segment black. Pronotal disk black, usually with anterior and posterior margins narrowly whitish (sometimes only anteriorly: fig. 37), broad lateral areas hyaline, rarely opaque whitish, sometimes partially bordered with white. Tegmina dark reddish brown, humeral region and anterior border hyaline, sprinkled with white along the dark brown area. Hind wing with the regions at the apexes of the thickened costal veins white, the distal area of the anterior field darkly infuscated, posterior field distinctly lighter (fig. 38). Abdominal terga dark brown. Abdominal sterna light or mottled dark brown. Cerci with three basal segments blackish brown, fourth cercomere a mixture of brown and white, segments five to nine white, terminal two segments yellowish; ventrally brown except for the two pale terminal segments. Legs pale, dorsal margins of femora dark brown.

Female: Supraanal plate strongly transverse, narrow, hind margin rounded with a small V-shaped excision medially. Subgenital plate with a narrow yellow area anteriorly, a broad dark brown medial macula reaching to the posterior margin, and a smaller mark in the anterolateral corners (fig. 40).

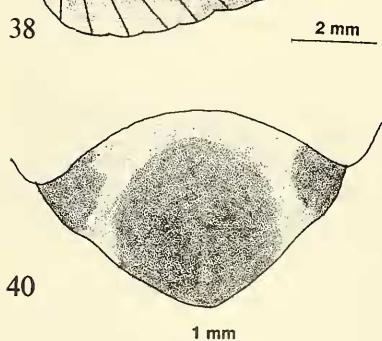
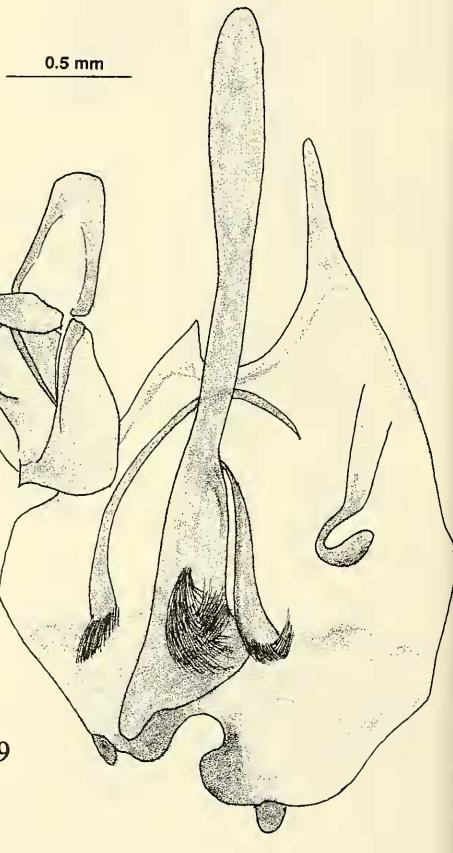
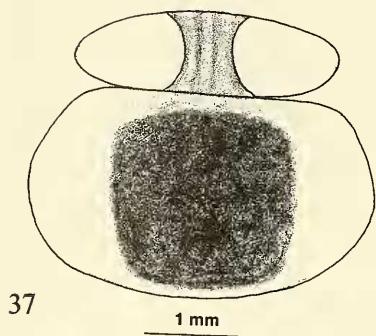
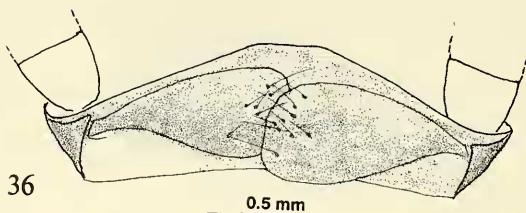
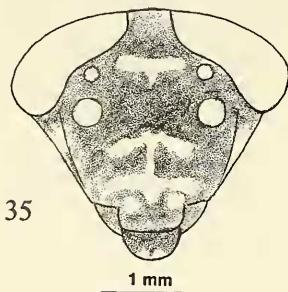
Measurements (mm) (♀ in parentheses). — Length, 9.0-10.0 (8.6-9.6); pronotum length \times width, 2.4-2.5 \times 3.8-4.2 (2.4-2.5 \times 4.0-4.2); tegmen length, 10.0-10.5 (9.2-9.6); interocular space, 0.5 (0.5).

Remarks. — Princis (1950: 179, fig. 27) recorded *Pseudophyllodromia ornata* from Pelawan besar, East Borneo. I have seen his specimen and the male's asymmetrical subgenital plate (see his fig. 27) is similar to that of *laticaput* (fig. 39), and I consider it to be a misidentification. The type of *ornata* is from the Philippines, and its facial markings (fig. 13) are distinctly different from *laticaput* (cf. fig. 35).

Pseudophyllodromia sp.

Material examined. — SARAWAK. HECO: 1♀, Miri, E. Mjöberg (labelled *Pseudophyllodromia laticaput* Brunner; this may be the specimen reported by Hanitsch, 1925: 89, as *Pseudophyllodromia laticeps* Walker).

Remarks. — This specimen does not agree with the characteristics of either *laticaput* or *laticeps*. Its head colour is reddish without distinct markings, and its



Figs. 35-40. *Pseudophyllodromia laticaput* (Brunner). 35-39, male from Sabah: 35, head; 36, supraanal plate and paraproct (ventral); 37, pronotum; 38, hind wing; 39, subgenital plate and genitalia (dorsal); 40, female from Tabang, Bengen River E. Borneo, subgenital plate (ventral).

subgenital plate has a large yellow macula on the basal half, the distal half and anterolateral corners dark brown to black, patterns similar to *laticeps* (figs. 22, 24); however, the fourth palpomere has a brown spot on the distal half, and the basal half of the fifth palpal segment is dark brown, the remaining portions of both segments white, whereas in *laticeps*, both fourth and fifth palpomeres are completely white. The head of *laticaput* is variegated with dark brown and yellow (fig. 35).

Measurements (mm): Length, 9.0; pronotum length \times width, 2.5 \times 4.0; tegmen length, 9.4; interocular width, 0.5.

Pseudophyllodromia aronsoni sp. n.

(figs. 41-45)

Type material. — Holotype, ♂, Malaysia, SABAH, Sipitang, Mendolong, T4/R, 6.v.1988, S. Adebratt; in ZILS. — Paratype. Sabah. ZILS: 1♂ (terminalia slide 429), same data as for holotype.

Description. — Male: Head exposed, ocellar spots very small, interocular space less than the distance between antennal sockets; the eyes do not extend below the antennal sockets (fig. 41). Pronotum subelliptical, widest behind the middle (fig. 42). Tegmina and wings fully developed extending beyond end of abdomen, the former with longitudinal discoidal sectors. Hind wing with costal veins thickened distad, radial and media veins simple, straight, cubitus vein with four complete and no incomplete branches, apical triangle absent (fig. 45). Front femur Type B₃, with three or four large proximal spines; pulvilli on four proximal tarsomeres of front and mid tarsi, only on the fourth tarsomere of the hind tarsus. Abdominal terga unspecialized. Supraanal plate strongly transverse, hind margin convexly rounded, paraprocts similar plates. Subgenital plate asymmetrical, hind margin with a U-shaped excavation, and with a pair of small styli, the right one stouter than the left (figs. 43, 44). Genitalia as in fig. 44: genital hook on the right side, very small, with a preapical incision; median phallomere with dark sclerotizations and setal brushes apically (in both specimens, the median phallomere protruded beyond the hind margin of the subgenital plate, as in fig. 43); the right phallomere apparently consists of several sclerites that are distributed to the left and right sides of the median phallomere.

Colour. — Head reddish brown without markings, labrum blackish (fig. 41); maxillary palpomeres three and four pale with large black stripes, fifth segment black, apex pale; antennae black, about the proximal ten antennomeres on one side pale. Pronotum with a large blackish brown, trapezoidal macula completely

surrounded by opaque yellowish (fig. 42). Tegmina dark reddish brown, anterior border pale. Hind wing anterior field with pale costal margin, the posterior part and apical region dark, remainder lighter, posterior field lightly infuscated (fig. 45). Abdominal terga, and meso- and metanotum very dark brown, edges pale. Abdominal sterna yellowish brown, laterally dark, styles very dark. Coxae dark brown basad, rest of legs brownish yellow. Dorsal surface of the cerci with cercomeres one to five black, segments six to eleven pale, ventrally all segments dark.

Female: Unknown.

Measurements (mm). — Length, 8.5; pronotum length \times width, 2.3 \times 3.5-3.7; tegmen length, 9.8-10.0; interocular width, 0.4.

Etymology. — The species is dedicated to my friend Melvin P. Aronson, Dr. of Pharmacy and prostheses expert.

Remarks. — The subgenital plate and styles of *aronsoni* are similar to those of *laticaput*, but the genital phallomeres are strikingly different in the two species (cf. figs. 39 and 44).

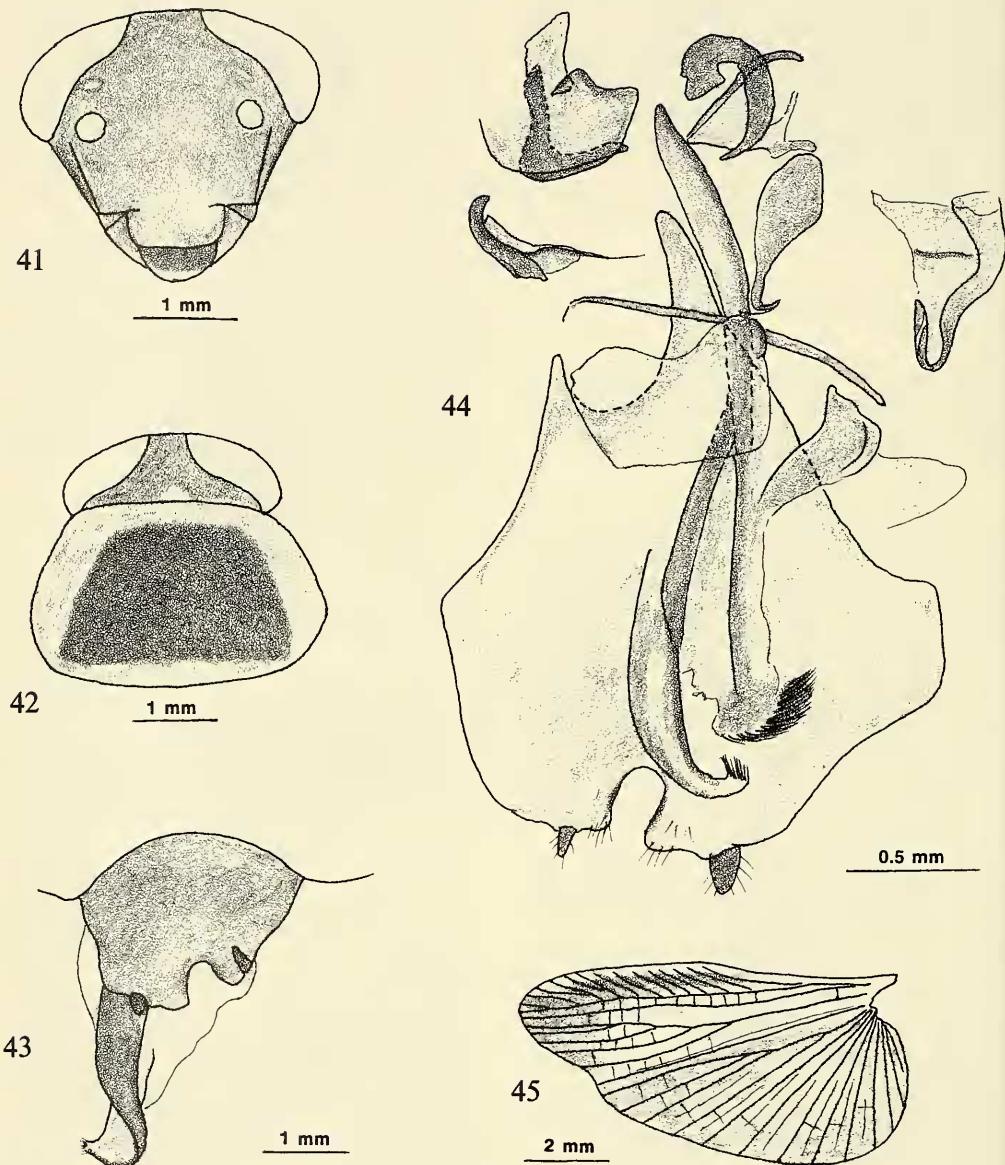
Pseudophyllodromia laeta Hanitsch stat. nov.

(figs. 46-52)

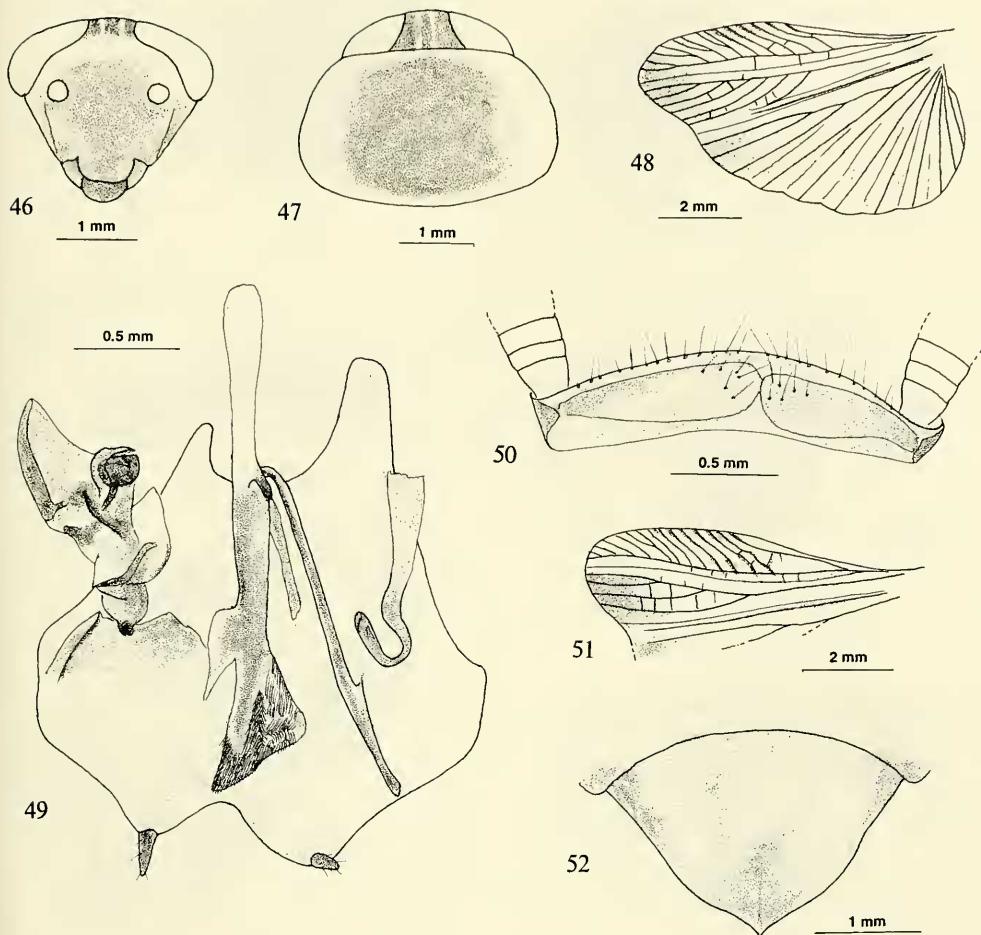
Pseudophyllodromia poiensis laeta Hanitsch, 1933a: 313 (♂ & ♀). — Princis, 1969: 933.

Material examined. — Lectotype (here designated): ♂ (terminalia slide 243), Mt. Poi [Sarawak], 5450 ft., Mjöberg; in HECO. Paralectotype: Sarawak. HECO: same data as lectotype, 1♀ (terminalia slide 246). — Additional material. SARAWAK. HECO: same data as lectotype, 1♂ (terminalia slide 244) (head missing; labelled *Pseudophyllodromia laticaput* Brunner, by Hanitsch).

Redescription. — Male: Head exposed, ocellar spots absent; interocular space less than the distance between small antennal sockets; eyes do not extend below the antennal sockets (fig. 46). Pronotum with anterior margin straight, hind margin weakly curved, lateral margins convexly rounded (fig. 47). Tegmina and wings fully developed, extending beyond end of abdomen, discoidal sectors of the former, oblique. Hind wing with six proximal costal veins clubbed, radial and media veins straight, simple, cubitus vein almost straight, with four or five complete and zero to one incomplete branches, apical triangle absent (fig. 48). Front femur Type B₃, with one to three large proximal spines; pulvilli on four proximal tarsomeres of front and mid legs, only on the fourth segment of the hind leg, tarsal claws symmetrical, simple, arolia present. Abdominal terga unspecialized. Supraanal plate strongly transverse, narrow, hind margin shallowly convexly rounded; paraprocts similar simple plates (fig. 50). Hind margin of subgenital plate with a median, asymmetrical, wide V-shaped excavation,



Figs. 41-45. *Pseudophyllodromia aronsoni* sp. n., male paratype: 41, head; 42, pronotum; 43, subgenital plate and protruding median genital phallomere (ventral); 44, subgenital plate and genitalia (dorsal); 45, hind wing.

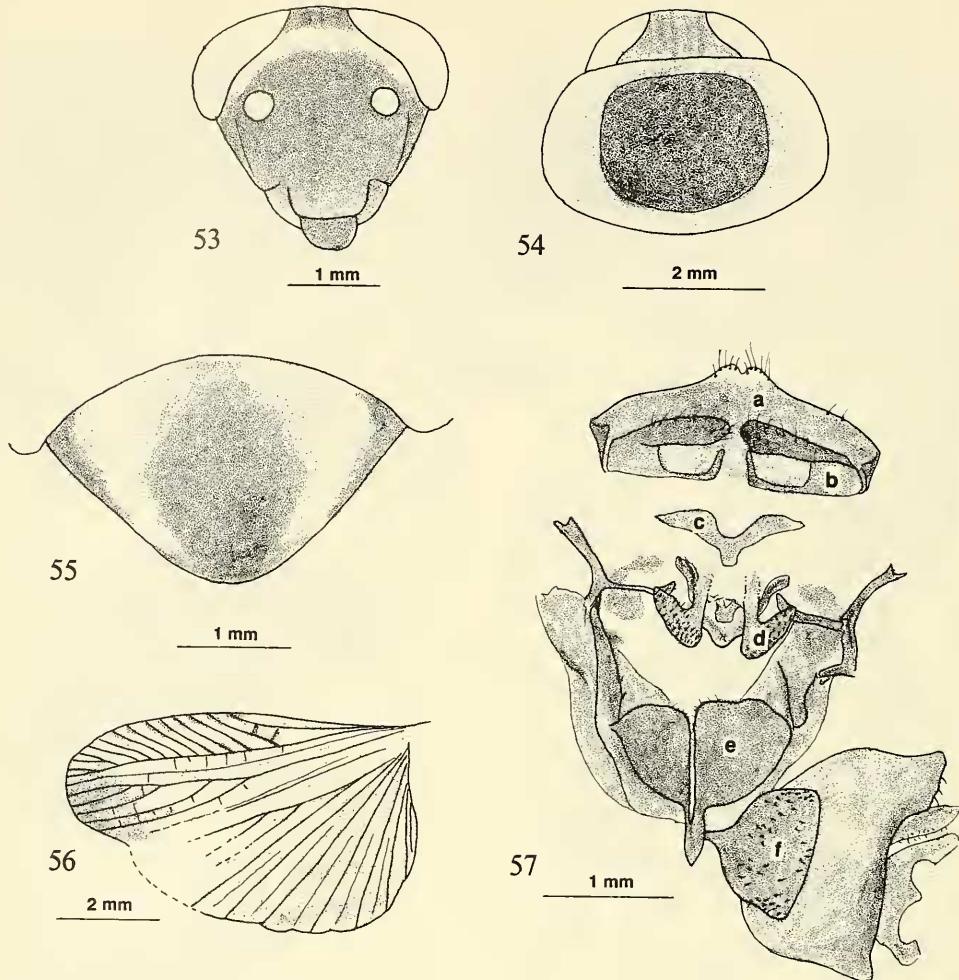


Figs. 46-52. *Pseudophyllodromia laeta* Hanitsch. 46-48, male lectotype, 49, 50, male paralectotype: 46, head; 47, pronotum; 48, hind wing; 49, subgenital plate and genitalia (dorsal); 50, supraanal plate and paraprocts (ventral); 51, 52, female paralectotype, anterior field of hind wing, and subgenital plate (ventral), respectively.

and a pair of small asymmetrical styles, the right one shorter (fig. 49). Genitalia as in fig. 49: hook on the right side with a preapical incision; median phallomere with a spur and two unequal rods arising before the middle, the shorter one lightly sclerotized and arising on the ventral surface (therefore may be hidden), the longer one darkly sclerotized and oblique; distal end of the phallomere is enlarged and setose; left phallomere consisting of several dark and light sclerites.

Colour. — Head occiput brownish with a pair of narrow longitudinal orangish stripes; region above the antennal sockets, with a poorly defined curved,

whitish band which blends into the yellowish orange face, labrum brownish (fig. 46); third maxillary palpomere with dorsal margin dark, remainder pale, fourth segment whitish, terminal segment black. Pronotal disk macula reddish brown, the margins not sharply defined, with a broad yellowish margin anteriorly and a narrower one posteriorly; laterally the dark macula is incompletely margined with yellow, remaining lateral zones hyaline (fig. 47). Tegmina hyaline, light brown, this colour laterally delineated by a yellowish stripe which is a continuation of the pronotal yellow, but which begins a short distance from the hind margin of the pronotum. Hind wing



Figs. 53-57. *Pseudophyllodromia poiensis* Hanitsch, females. 54, 55 from lectotype, all others from paralectotype: 53, head; 54, pronotum; 55, subgenital plate (ventral); 56, hind wing; 57, supraanal plate, paraprocts and genitalia (ventral); a, supraanal plate; b, right paraproct; c, intercalary sclerite; d, first valve; ? spermathecal plate; f, ? laterosternal shelf.

with costal region yellowish, distal region of anterior field darkly infuscated, cubitus veins and its branches dark, posterior field more lightly infuscated (fig. 48). Abdominal terga yellow. Abdominal sterna lightly infuscated. Cerci dorsally with three basal segments brown, remaining cercomeres pale, ventrally dark, the penultimate segment pale.

Female: Legs as in male with a pulvillus only on the fourth tarsomere of the hind leg, but present on all proximal tarsomeres of the front and mid legs. Cubitus vein of hind wing with three complete and no incomplete branches, apical triangle absent (fig. 51). Supraanal plate strongly transverse, narrow, hind

margin and paraprocts similar to *poiensis* (see fig. 57). Genitalia similar to *poiensis* (see fig. 57). Head with occiput reddish brown, narrow longitudinal stripes absent. Abdominal terga yellowish with some lateral infuscation, terminal segments darker, the supraanal plate with a lateral hyaline, pale spot, partly hidden under the ninth segment. Abdominal sterna lightly infuscated, subgenital plate yellowish without distinct dark markings (fig. 52).

Measurements (mm) (♀ in parentheses). Length, 7.0-8.7 (8.5); pronotum length \times width, 2.3-2.4 \times 3.7-4.1 (2.5 \times 3.7); tegmen length, 8.7-8.8 (8.4); interocular width, 0.6 (0.6).

Remarks. — Although Hanitsch considered this taxon to be a subspecies of *poiensis*, I believe that the differences in the pronotal, and subgenital plate markings warrant its being raised to specific rank in spite of the similarity of the female genitalia in both taxa. It is unfortunate that the male of *poiensis* is unknown for an examination of this sex, when it is found, may show whether or not my interpretation of these species is correct.

Pseudophyllodromia poiensis Hanitsch
(figs. 53-57)

Pseudophyllodromia poiensis poiensis Hanitsch, 1933a: 313, fig. 7 (♀); Bruijning, 1948: 90; Princis, 1969: 933.

Material examined. — Lectotype (here designated): ♀, Mt. Poi [Sarawak], 4500 ft., E. Mjöberg, 1924; in HECO. Paralectotype: Sarawak. HECO: ♀ (terminalia slide 245), same locality and collector as lectotype, 5350 ft.

Redescription. — Female: Head exposed, interocular space less than distance between very small antennal sockets, ocellar spots absent; eyes do not extend below the antennal sockets (fig. 53). Pronotum with anterior margin straight, hind margin rounded, lateral margins convex, widest about the middle (fig. 54). Tegmina and wings fully developed, extending beyond end of abdomen, discoidal sectors of former oblique. Hind wing with radial and media veins simple, cubitus vein weakly curved, with four complete and no incomplete branches, apical triangle absent (fig. 56). Legs badly damaged or missing. Supraanal plate transverse, hind margin with a small medial excision (fig. 57). Genitalia as in fig. 57: not seen are a pair of slender, apically rounded, colourless spermathecae (visible under the compound microscope).

Colour. — Head with occiput reddish brown, and only a weak indication of three light red longitudinal stripes; a distinctly defined yellowish band curves between the eyes above the antennal sockets, rest of face dark reddish to the clypeus, or somewhat lighter from below the antennal sockets to the clypeus, labrum dark brown (fig. 53); fourth maxillary palpomere pale, segment five black. Pronotal disk with a sharply delineated, suboval, black macula, completely surrounded by a yellow band, outer lateral zones subhyaline yellowish (fig. 54). Tegmina reddish brown, humeral, and most of costal vein area yellow (continuation of pronotal yellow). Abdominal sterna black with a yellow medial area on the penultimate segment; subgenital plate with a large, black, medial area and smaller ones laterally on basal half (fig. 55).

Male: Unknown.

Measurements (mm). — Length, 8.4-9.2; pronotum length \times width, 2.4-2.6 \times 4.0-4.2; tegmen length, 8.3-8.7; interocular space, 0.6-0.7.

Remarks. — See remarks under *laeta*.

Allacta Saussure & Zehntner

Allacta Saussure & Zehntner, 1895: 45. — Roth 1991: 996 (diagnosis and synonymy); 1993: 361; 1995: 51. — Type species: *Abrodieta modesta* Brunner, by selection by Hebard.

Euhanitschia Princis, 1950: 178. — Type species: *Phyllodromia diagrammatica* Hanitsch, by monotypy. syn. n.

Compsosilpha Princis, 1950: 180. — Type species: *Chorisoblatta karnyi* Hanitsch, by monotypy. syn. n.

Remarks. — Recently, most of the known taxa of *Allacta* have been redescribed and new species have been added (Roth 1991: 996; 1993: 361; 1995: 51).

Allacta diagrammatica (Hanitsch) comb. n.
(figs. 58-64)

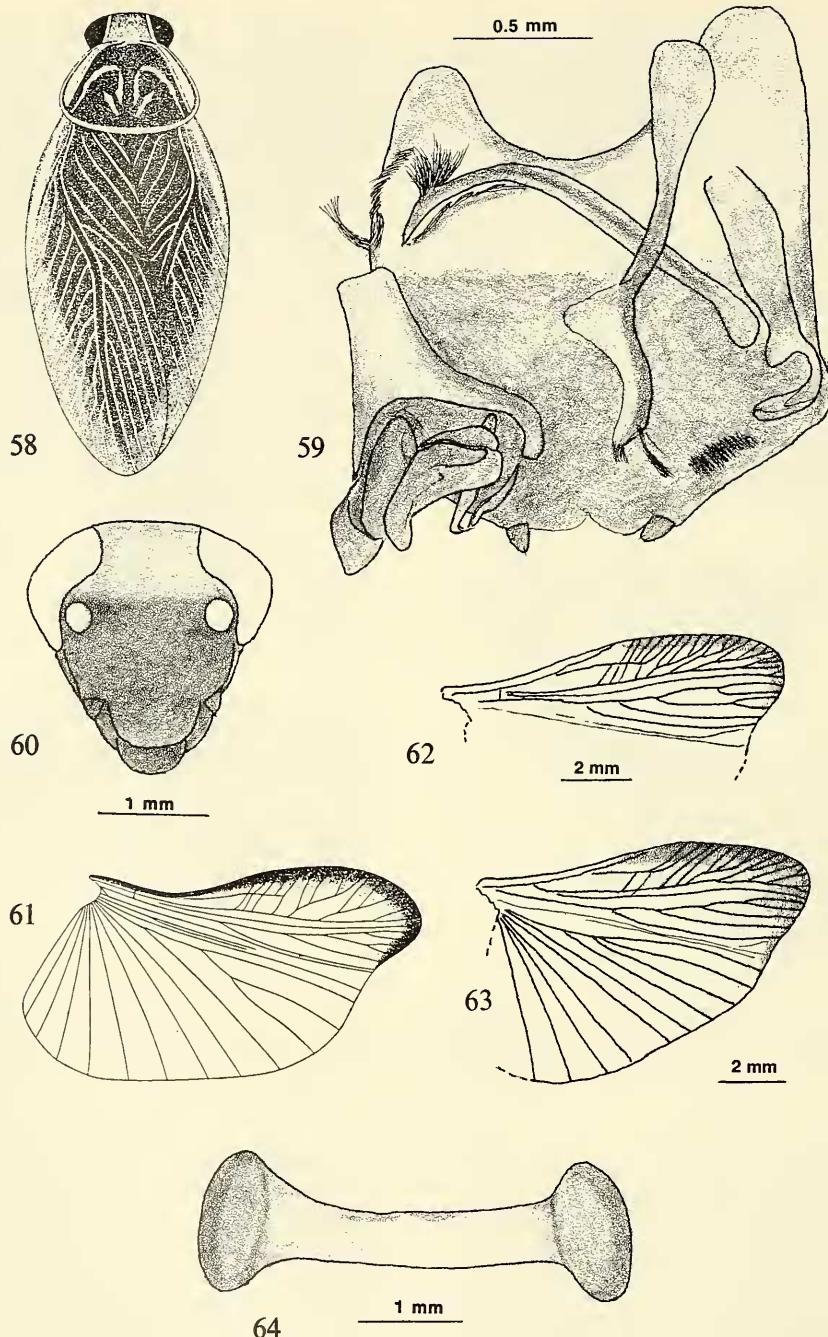
Phyllodromia diagrammatica Hanitsch, 1923b: 198, figs. 1-3 (♀). — 1923a: 404, figs. 6-8 (♂); Hebard 1929: 11; Bruijning 1948: 38, fig. 44.

Chorisoblatta diagrammatica (Hanitsch). — Hanitsch 1928: 27; 1929: 15.

Euhanitschia diagrammatica (Hanitsch). — Princis 1950: 180.

Material examined. — Lectotype, ♂ (terminalia slide 301), Selangor F.M.S., Kuala Lumpur, i.1918, C. Boden Kloss (with written label *Cretographa diagrammatica* Han. (♂); Type Orth. 278½ in HECO. Paralectotype. HECO: 1♂, same data as lectotype, Type Orth. 278½ (the specimen is badly fragmented and parts are mounted on cardboard). — Additional material. — JAVA. ZILS: Soekaboemi, 1♀, xii.1937, Mrs. M.E. Walsh (this specimen was reported by Princis when he described *Euhanitschia*).

Redescription. — Male: Head with eyes extending below the antennal sockets, interocular space less than the distance between the sockets (fig. 60). Pronotum subparabolic, hind margin curved (fig. 58). Tegmina and wings fully developed, the former with oblique discoidal sectors. Hind wing with costal margin almost straight (see remarks), radial and media veins simple, cubitus vein with four or five complete (one may be forked), and no incomplete branches, apical triangle small (figs. 61-63). Front femur Type B₂ with two or three large proximal spines (lectotype; see remarks); pulvilli present only on the fourth proximal tarsomere, tarsal claws symmetrical, simple, arolia present. Abdominal terga unspecialized; supraanal plate transverse, hind margin convex, intercercal processes absent, right and left paraprocts similar sclerotized plates. First abdominal sternum with lateral thickenings in the shape of tegmina-like lobes (fig. 64). Subgenital plate symmetrical with a pair of very small, similar styles, interstyilar margin shallowly incised (fig. 59; in the drawing, coverslip pressure spread the styles wider apart than they are in the



Figs. 58-64. *Allacta diagrammatica* (Hanitsch): 58, 59, male holotype, habitus (from Hanitsch, 1923b: fig. 1), and subgenital plate and genitalia (dorsal); 60, female (from Java), head; 61, right hind wing of male paralectotype (from Hanitsch, 1923b: fig. 2); 62, anterior field of right hind wing of male paralectotype (camera lucida drawing of same specimen shown in fig. 61); 63, female (from Java), right hind wing; 64, male holotype, first abdominal sternum showing the lateral swellings (slide preparation).

pinned specimen). Genitalia as in fig. 59: hook on the right side, with a preapical incision; median phallosome with distal region enlarged, apex with some small setae; lying under the median phallosome is a curved rod that terminates in a setal modification on the left side; left phallosome very large consisting of several nonsetose sclerites.

Female: Habitus similar to male. Head as in fig. 60. Cubitus vein of hind wing with four complete and no incomplete branches, apical triangle subobsolete (fig. 63). Right front femur with two large proximal spines succeeded by a row of piliform spinules (Type B), left front femur apparently without large proximal spines (Type C); pulvilli only on the fourth proximal tarsomere, tarsal claws symmetrical, simple, arolia present. First abdominal sternum without lateral swellings (i.e., not as in male). Supraanal plate transverse, hind margin convex with a medial excavation (similar to that shown in fig. 67).

Colour. — Head with region anterior to the antennal sockets red, remainder black (fig. 60). Pronotum with the outer margin narrowly white, the disk black narrowly edged with white, and with two large curved and two small oblique white lines (fig. 58). Tegmina black proximally, becoming brownish distad, veins white (fig. 58). Hind wing clear, or weakly infuscated, transparent, the costal vein area darker (Figs. 61-63). Abdomen brown with dark areas laterally. Coxae, femora, and tibiae black, tarsi pale.

Measurements (mm) (♀ in parentheses). — Length, 8.5-9.2 (10.5); pronotum length \times width, 2.1-2.3 \times 3.2-3.3 (2.5 \times 3.6); tegmen length, 9.8-10.0 (10.5); interocular width, 0.7 (1.0).

Remarks. — Hanitsch had five specimens, one without locality data from the Buitenzorg Museum, two from Singapore (one in the Raffles Museum, the other in HCEO), and two from Kuala Lumpur (the syntypes). His description was based on one of the specimens from Kuala Lumpur.

Hanitsch's drawings of the right and left wings of the paralectotype exaggerates the curvature of the costal vein which is no different from species whose costal veins are straight (cf. figs. 61 and 62). Based on Hanitsch's description and drawing, Princis described the anterior margin of the wing as strongly sigmoid and made it a distinguishing character of his genus *Euhanitschia*. Princis apparently did not examine the syntypes, or at least did not indicate that he had seen them. He listed one specimen in his description but didn't make a slide of the hind wing. I have examined that specimen and the wing, after mounting (fig. 63) shows that the shape of the costal vein is not unusual as described by Hanitsch.

Hanitsch was correct in describing the front femur of his specimens as Type B2. Princis (1950: 179) disagreed and stated that the stout proximal spines were

nothing but slender setae and the femur is Type C; however his specimen apparently had a Type C right femur, but the left femur had two stout proximal spines (Type B) that were adpressed to the very dark femur and were difficult to see.

The subgenital plate, styles and genitalia of *Euhanitschia* clearly show that it is an *Allacta*, having all the important characters of that genus. The lateral tegmina-like pads on the first abdominal sternum in the male (absent in the female) seems to be unique for the species, and in addition to the striking colour patterns of the pronotum and tegmina readily identifies it.

The colour pattern of the head (fig. 60) is characteristic of some members of the *funebris* species group (Roth 1995: 53). However, the pronotum of the species in this group do not have colour patterns and usually are entirely dark or with lateral regions or posterolateral corners narrowly yellowish or yellowish white. The genitalia of *diagrammatica* strongly resemble those species in the *funebris* group.

Hanitsch (1928: 27) recorded *diagrammatica* from Singapore, Sumatra (Pakan Baroe, and Medan), and Indonesia (Siberut Island). He had one female from Siberut that was carrying an ootheca in the vertical position, which is characteristic of the Pseudophyllodromiinae.

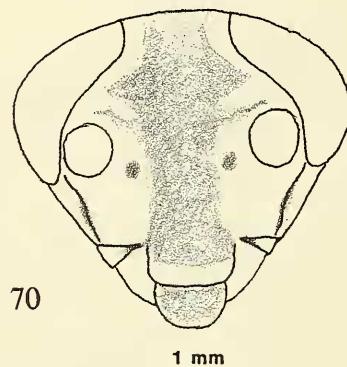
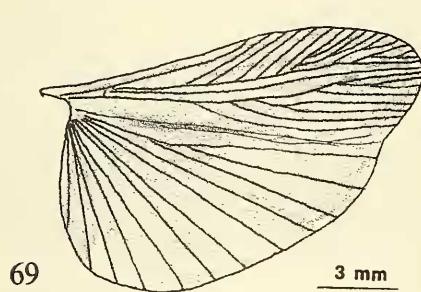
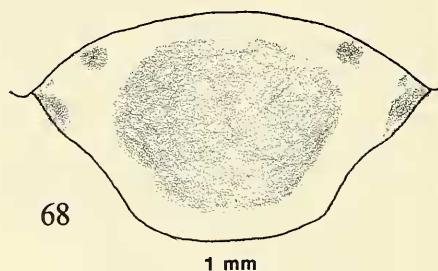
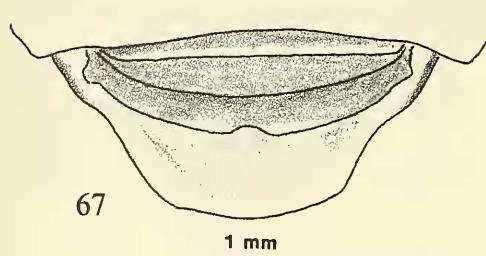
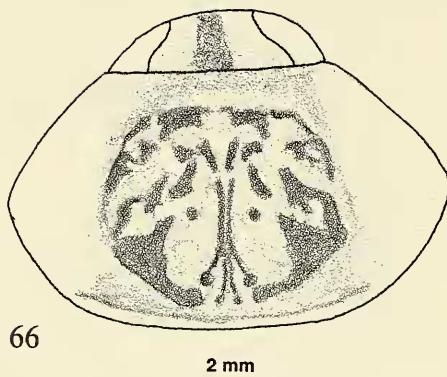
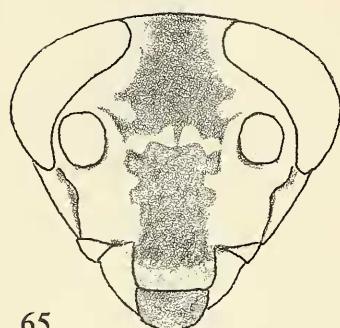
Allacta karnyi (Hanitsch) comb. n.
(figs. 65-70)

Chorisoblatta karnyi Hanitsch, 1928: 27, pl. I, fig. 8 (♀).
Pseuchochorisoblatta karnyi (Hanitsch). — Bruijning 1948: 92.

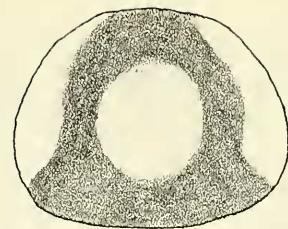
Composilpha karnyi (Hanitsch). — Princis 1950: 180; 1969: 931.

Material examined. — Holotype ♀, Mentawai[a]i, Siberet, 25.ix.1924 with a handwritten label, genotype: *Maculoblatta karnyi* Han.; Type Orth. 336 in HCEO. Additional material. — SUMATRA. ZILS: Benkoelen, Boekit Itam, 1800 ft., 2♀, v.1935, Mrs. M.E. Walsh [these two specimens were reported by Princis 1950: 180, in his description of *Composilpha*].

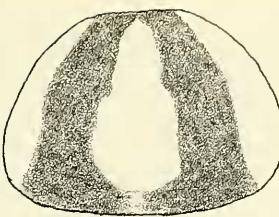
Redescription. — Female: Head with eyes not extending below the antennal sockets, interocular space less than the distance between the antennal sockets (figs. 65, 70). Pronotum subelliptical, anterior margin straight (fig. 66). Tegmina and wings fully developed extending beyond the end of the abdomen, the former with oblique discoidal sectors. Hind wing with simple radial and median veins, cubitus vein with four to six complete (one or two may be forked) and no incomplete branches, apical triangle subobsolete (Fig. 69). Front femur Type B, with one, two (Type B), or no (Type C) small stout proximal spines (see remarks); pulvilli on the fourth proximal tar-



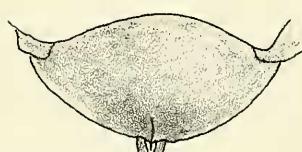
Figs. 65-70. *Allacta karnyi* (Hanitsch), females. 65-69, holotype; 65, 66, head and pronotum; 67, abdominal terga 8 to 10, and subgenital plate; 68, subgenital plate (ventral); 69, right hind wing; 70, female from Sumatra, head.



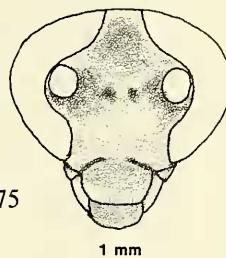
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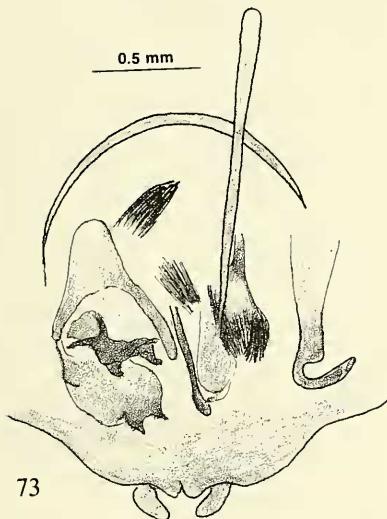
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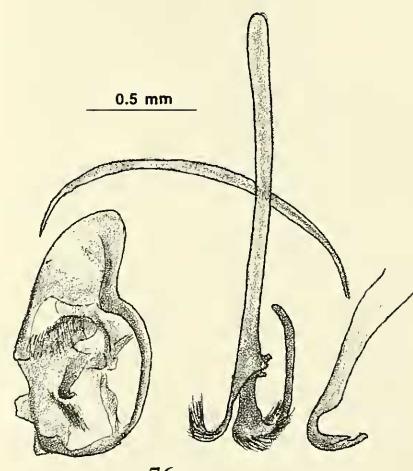
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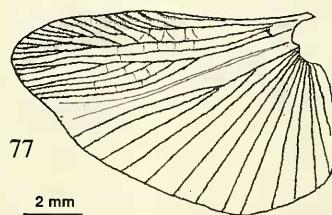
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Figs. 71-77. *Allacta* spp., males from Sri Lanka. 71-73, *A. figurata* (Walker): A, pronotum; B, subgenital plate (ventral; pinned specimen); C, genitalia and distal end of subgenital plate (dorsal; the styles are wider apart than seen in the pinned specimen, because of pressure of the coverslip). 74-77, *A. diluta* (Saussure): 74, pronotum; 75, head; 76, genitalia (dorsal); 77, hind wing.

somere only, tarsal claws symmetrical, simple, arolia small. Supraanal plate strongly transverse, hind margin convexly rounded, with a shallow indentation medially (fig. 67).

Male: Unknown.

Colour. — Head brownish yellow, the occiput with a longitudinal black uneven stripe that is interrupted between the antennal sockets, continuing to the clypeus, labrum dark (fig. 65), or the longitudinal stripe is not distinctly separated between the antennal sockets (fig. 70); maxillary palpi pale; antennae reddish. Pronotal disk base colour brownish yellow with black picturing, broad lateral borders whitish-hyaline without dark dots (fig. 66). Tegmina with subcostal area and most of the anterior field whitish-hyaline, remainder with dark brown irregular blotches, veins white. Hind wing practically uniformly infuscated (fig. 69). Abdominal terga shiny, dark brown to black, with lateral brownish-yellow spots. Abdominal sterna black with sublateral yellowish maculae, subgenital plate with a large, dark macula surrounded by yellow, the anterior lateral corners black (fig. 68). Cerci dorsally dark basally and partially dark on the inner halves, the remainder yellowish; ventrally with middle segments pale on their outer halves, the remainder dark. Coxae brownish-yellow, femora dark along the dorsal margin, pale on the ventral halves; tibiae pale with dark bands.

Measurements (mm). — Length, 13.5-15.6; pronotum length \times width, 3.3-3.7 \times 5.7-5.9; tegmen length, 14.3-14.8; interocular width, 0.9.

Remarks. — Hanitsch was correct in stating that the front femur is Type B, whereas Princis claimed it is Type C. They apparently are both correct. The holotype has one minute stout proximal spine succeeded by a row of piliform spinules (Type B). Princis had two specimens which I have examined: the front femora of one of them has two minute stout proximal spines, and the second specimen has two small stout proximal spines on the right femur (Type B) and zero stout spines succeeded by piliform spinules (Type C) on the left femur. The stout proximal spines are very small (about the same length as the piliform spinules, but stouter).

Hanitsch correctly stated that this species is related to *Blatta polygrapha* Walker and *Blatta megaspila* Walker which he placed under *Chorisoblatta*, and which I am here synonymizing with *Allacta*. Hanitsch pointed out that *megaspila* and *polygrapha*, show a striking similarity to *karnyi* in the markings both of the pronotum and of the tegmina [in Roth 1993, figs. 8B, C, and 10B, D]; *polygrapha* is distinguished by the markings of its head which run transverse [see fig. 8A, in Roth 1993], not longitudinal as in *karnyi*, whilst in *megaspila* there are two narrow longitudinal lines on the occiput which join on the vertex and are

continued down the face as a broad chestnut band [see fig. 10A, in Roth 1993].

The longitudinal facial markings and pronotal picturing place *karnyi* in the *polygrapha* species group.

Allacta figurata (Walker)

(figs. 71-73)

Blatta figurata Walker, 1871: 24 (male).

Allacta figurata (Walker). — Roth 1993: 370, figs. 5A-D (male, redescription, synonymy).

Material examined. — SRI LANKA. ZILS: Ceylon, N. Centr. Prov. Willpattu, N.P., Maradan Maduwa, 23 miles W. of Anuradapura, under bark, 1♂ (terminalia slide 430), 2.ii.1962, Loc. 48, Lund Univ. Ceylon Exped. 1962, Brinck, Andersson, & Cederholm.

Remarks. — I (Roth 1993: 370) redescribed this species from the holotype from Bombay, India. However, the specimen was badly damaged and a pin had been pushed through the abdomen so that a genitalia slide could not be made. The following can be added to my earlier description, based on the male specimen from Sri Lanka: Abdominal terga unspecialized. Supraanal plate transverse, hind margin convexly rounded, entire. Subgenital plate symmetrical with a shallow incision medially, the margins of the excision forming a small keel on each side of which is a small style (figs. 72, 73). Genitalia as in fig. 73. The phallomeres are very similar to those of *Allacta interrupa* (Hanitsch) from Java (cf. fig. 73 with fig. 4E in Roth 1993) and show that these two species are very close to one another; the habitus (color patterns) of *interrupa* also is similar to *figurata*. Princis (1965: 151) treated *figurata* as a synonym of *Allacta diluta* (Saussure), which is also from Sri Lanka. Although I have not seen the type of *diluta*, a specimen which I believe is that species, described below, shows that the two species are distinct.

Allacta diluta (Saussure)

(figs. 74-77)

Blatta diluta Saussure, 1863: 153 (female). — Walker 1868: 89; Saussure & Zehntner 1895: 31.

Phyllobdromia diluta (Saussure). — Kirby 1904: 91; Shelford 1908: 12;

Pseudochorisoblatta diluta (Saussure). — Princis 1951: 90; 1959: 132.

Allacta diluta (Saussure). — Princis 1965: 151; Roth 1993: 371.

Material examined. — SRI LANKA. ZILS: Ceylon, W. Prov. Yakkala, 18 miles NE. of Colombo, at light, 1♂ (terminalia slide 431), 1-28.ii.1962, loc. 10, Brinck-Andersson-Cederholm, Lund Univ. Ceylon Expedition, 1962.

Description. — Male (previously undescribed): Head with interocular space considerably less than

the distance between the antennal sockets, eyes extending well below the sockets, almost reaching the mandibles (fig. 75). Pronotum suboval, widest behind the middle (fig. 74). Tegmina and wings fully developed extending beyond the end of the abdomen, the former with oblique discoidal sectors. Hind wing with radial and media veins simple, cubitus vein with six simple, complete branches, apical triangle small (fig. 77). Front femur Type B₃, with five large proximal spines; pulvilli only on the fourth proximal tarsomere of all legs, tarsal claws symmetrical, simple, arolia present. Abdominal terga unspecialized; supraanal plate transverse, hind margin convex, entire, paraprocts simple, similar plates. Subgenital plate symmetrical, medially incised, the margins of the excision forming a keel, on each side of which is a small style (similar to fig. 72; the styles were broken off and lost in slide preparation). Genitalia as in fig. 76: hook on the right side with a preapical incision; median phallomere modified apically; left phallomere large consisting of several sclerites, at least two of them with setal brushes.

Colour. — Head reddish-brown with a weak dark spot on the vertex, a pair of more distinct spots between the darkly-ringed antennal sockets and a medially interrupted dark line on the anterior margin of the clypeus, posterior half of the clypeus lighter (fig. 75); maxillary palpi pale; antennae light brown. Pronotum with a dark reddish-brown-blackish macula, its bottle-shaped center, and lateral borders yellowish (fig. 74). Tegmina light reddish with darkened regions in the anal area and mid region. Hind wing lightly infuscated. Abdominal terga brown, the lateral edges yellowish. Abdominal sterna brownish yellow, lateral regions dark. Cerci dorsally with a brown longitudinal stripe, ventrally all dark.

Female: Not seen.

Measurements (mm). — Length, 12.0; pronotum length \times width, 3.0 \times 4.0; tegmen length, 12.0; interocular width, 0.3.

Remarks. — Princis considered *figurata* a synonym of *diluta*. I (Roth 1933: 370, 371) treated both species as distinct, based on Saussure's description of the latter; he described the head as brownish and the pronotal disk with a testaceous, longitudinal macula (in *figurata*, the pale macula is oval, fig. 71). In the present specimen, the colour is close to Saussure's description, and the macula in the center of the pronotum is longitudinal (fig. 74). If my identification of *diluta* is correct, then there is no doubt that these two species are distinct, and closely related.

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